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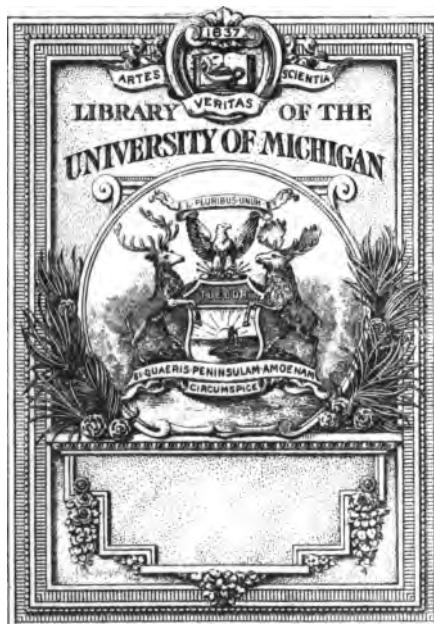
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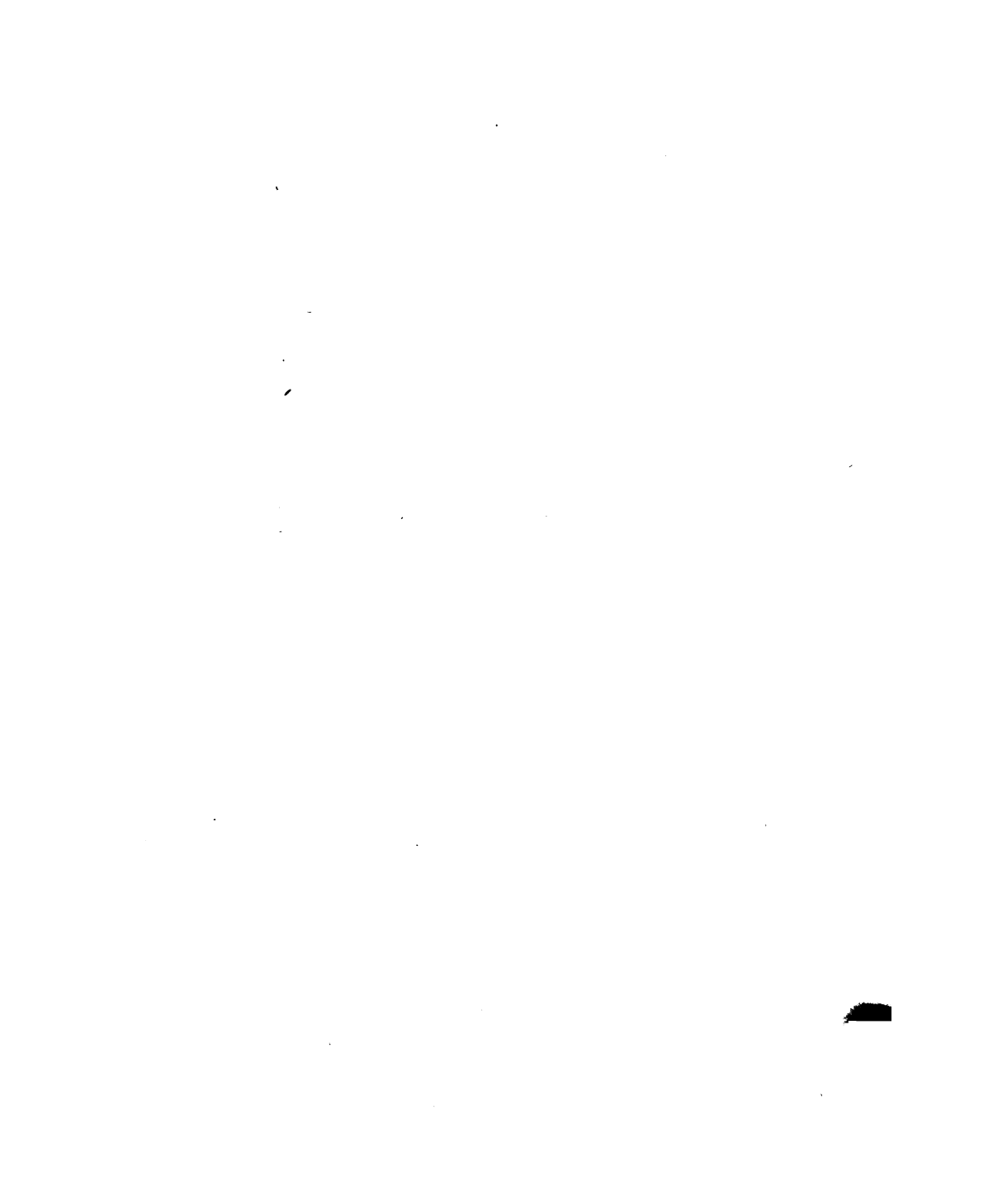


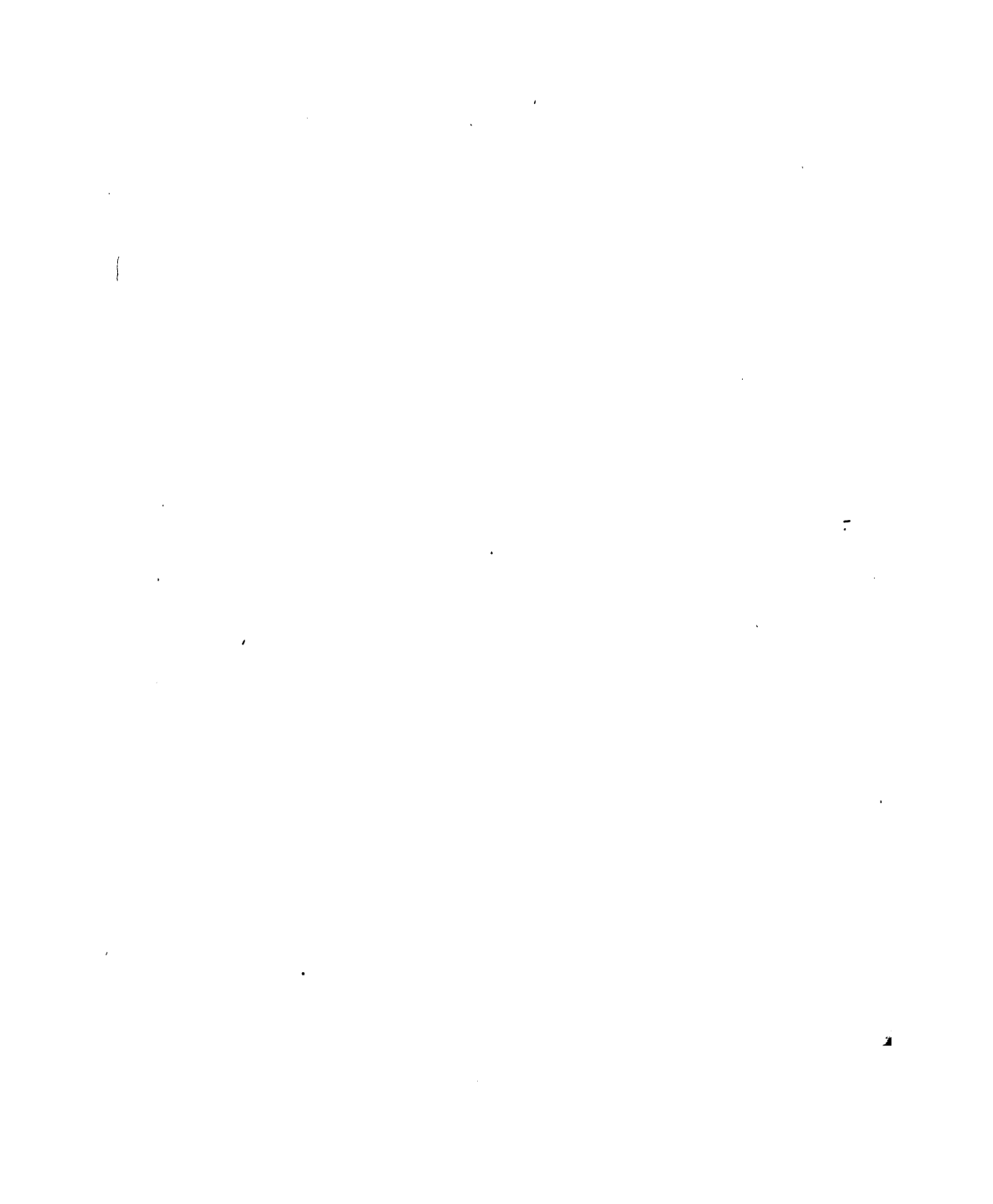
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THE ELEMENTS OF
ARCHITECTURE

1







The
ELEMENTS
of
ARCHITECTURE.

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31 The 10
ELEMENTS
of
ARCHITECTURE
collected by
Henry Wotton K^t
from the best Authors
and Examples



LONDON
M·D·CCCC·III

✦ This edition of 350 copies is reprinted from the first impression, printed at London, in 1624, by John Bill; with the addition of the Dedication to Prince Charles, and the note on p. 70, which have been taken from the original draughts, in the copy presented by the author to the Prince, and now preserved in the British Museum.

TO CHARLES,
PRINCE OF WALES.

May it please

Youre Highnesse

I fear I shall much surprize youre Highnesse with a Pamphlet of this subject under my poore name: which I undertooke since my returne for some diversion of my minde from my infirmitie which I was troubled with a miserable stopping in my breast and defluxion from my head.


It was printed sheete by sheete as fast as It was born, and It was born as soone as It was conceived: So as It must needes have the imperfections, and deformities of an immature birth besides the weakenesse of the Parent. And therefore I durst not allowe it so much favour even from my self as to thinke it worthie of any dedication, yet as I have presented the first copie thereof to the King, so is the second due to y^r Highnesse. And the rather, because you have taken a view of forein structure and have made youre self besides

*youre civil observations a good Judge of Arts.
But that which particularly doeth make me
bold to intertayne you therewith is that I have
noted in youre gracious eyes some favourable
aspect towards me: whereby I stande in hope
from youre Highnesse of the more indulgent
censure of my little paynes: And so I rest*

*Your Highnesse his true
devoted servant*

HENRY WOTTON.

THE PREFACE.

 SHALL not neede (like the most part of Writers) to celebrate the Subiect which I deliver. In that point I am at ease. For Architecture, can want no commendation, where there are Noble Men, or Noble mindes; I will therefore spend this Preface, rather about those, from whom I have gathered my knowledge; For I am but a gatherer and disposer of other mens stuffe, at my best value.

Our principall Master is Vitruvius and so I shall often call him; who had this felicitie, that he wrote when the Roman Empire was neere the pitch; Or at least, when Augustus (who favoured his endeavours) had some meaning (if he were not mistaken) to bound the Monarchie: This I say was his good happe; For in growing and enlarging times, Artes are commonly drowned in Action: But on the other side, it was in truth an unhappinesse, to expresse himselfe so ill, especially writing (as he did) in a season of the ablest Pennes; And his obscuritie had this strange fortune; That

Tacit. lib. i.
Annal.

though he were best practised, and best followed by his owne Countrymen ; yet after the reviving and repolishing of good Literature, (which the combustions and tumults of the middle Age had uncivillized) he was best, or at least, first understood by strangers : For of the Italians that tooke him in hand, Those that were Gramarians seeme to have wanted Mathematicall knowledge ; and the Mathematicians perhaps wanted Gramer : till both were sufficiently conioyned, in Leon-Batista Alberti the Florentine, whom I repute the first learned Architect, beyond the Alpes ; But hee studied more indeede to make himselfe an Author, then to illustrate his Master. Therefore among his Commenters, I must (for my private conceite) yeild the chiefe praise unto the French, in Philander ; and to the high Germans, in Gualterus Rivius : who, besides his notes, hath likewise published the most elaborate translation, that I thinke is extant in any vulgar speech of the world : though not without bewayling, now and then, some defect of Artificiall tearmes in his owne ; as I must likewise ; For if the Saxon, (our mother tongue) did complaine ;

as iustly (I doubt) in this point may the Daughter: Languages, for the most part in tearmes of Art and Erudition, retayning their originall povertie, and rather growing rich and abundant, in complementall phrases and such froth. Touching divers moderne men that have written out of meere practise, I shall give them their due, upon occasion.

And now, after this short Censure of others, I would faine satisfie an Obiection or two, which seeme to lie somewhat heavily upon my selfe; It will be said that I handle an Art, no way suteable either to my employments, or to my fortune. And so I shall stand charged, both with Intrusion, and with Impertinency.

To the First I answere, that though by the ever acknowledged goodnesse of my most deare and gracious SOVERAIGNE; and by his long indulgent toleration of my defects, I have borne abroad some part of his civill service; yet when I came home, and was againe resolved into mine owne simplicitie, I found it fitter for my Pen (at least in this first publique adventure) to deale with these plaine compilements, and tractable Materials; then with the Labe-

Aristot. 2.
lib. Politi.
cap. 6.

rynthes and Mysteries of Courts and States ;
And lesse presumption for mee, who have
long contemplated a famous Republique,
to write now of Architecture ; then it was
anciently for Hippodamus the Milesian, to
write of Republicques, who was himselfe
but an Architect.

To the Second, I must shrinke up my
shoulders, as I have learn'd abroad, and
confesse indeede, that my fortune is very
unable to exemplifie, and actuate my Specu-
lations in this Art, which yet in trueth, made
mee the rather even from my very dis-
abilitie, take encouragement to hope ; that
my present Labour, would find the more
favour with others, since it was undertaken
for no mans sake, lesse then mine owne.
And with that confidence, I fel into these
thoughts ; Of which, there were two wayes
to be delivered ; The one Historical, by
description of the principall workes, per-
formed already in good part, by Giorgio
Vassari in the lives of Architects : The
other Logically, by casting the rules and
cautions of this Art, into some comfortable
Methode : whereof I have made choice ;
not onely as the shortest and most Ele-

mentall; but indeed as the soundest. For though in practicall knowledges, every complete example, may beare the credite of a rule; yet peradventure rules should preceed, that we may by them, be made fit to iudge of examples: Therefore to the purpose; for I will preface no longer. ♀



OF THE ELEMENTS OF ARCHITECTURE.

The I. part.



N Architecture as in all other
Operative Arts, the end must
direct the Operation.

The end is to build well.

Well building hath three Conditions.

Commoditie, Firmenes, and Delight.

A common division among the Deliverers
of this Art, though I know not how, some
what misplaced by Vitruvius himselfe. lib. 1.
cap. 3. whom I shalbe willinger to follow,
as a Master of Proportion, then of Methode.

Now, For the attayning of these Inten-
tions, wee may consider the whole Subiect,
under two generall Heads.

The Seate, and the Worke.

Therefore first touching Scituation.

The Precepts thereunto belonging, doe
either concerne the Totall Posture, (as I

may tearm it) or the Placing of the Parts : wherof the first sort, howsoever usually set downe by Architects as a piece of their Profession : yet are in truth borrowed, from other Learnings: there being betweene Arts and Sciences, as well as betweene Men, a kinde of good fellowship, and communication of their Principles.

For you shall finde some of them, to be meerely Physicall, touching the qualitie and temper of the Aire : which being a perpetuall ambient, and ingredient, and the defects thereof, incorrigible in single Habitations (which I most intend) doth in those respects, require the more exquisite caution ; That it be not too grosse, nor too penetrative ; Not subiect to any foggy noysomnesse, from Fenns or Marshes neere adioyning ; nor to Mineral exhalations, from the Soile it selfe. Not undigested, for want of Sunne, Not unexercised, for want of Winde : which were to live (as it were) in a Lake, or standing Poole of Aire, as Alberti the Florentin Architect, doth ingeniously compare it.

Some doe rather seeme a little Astrological, as when they warne us from Places of malign Influence: where Earthquakes, Con-

tagions, Prodigious Births, or the like, are frequent without any evident cause: whereof the Consideration is peradventure not altogether vaine: Some are plainely Oeconomical; As that the Seate be well watered, and well fewelled, That it bee not of too steepie and incommodious Accesses to the trouble both of friends and familie. That it lie not too farre, from some navigable River or Arme of the Sea, for more ease of provision and such other Domestique notes.

Some againe may bee said to bee Optical: Such I meane as concerne the Properties of a well chosen Prospect: which I will call the Royaltie of Sight. For as there is a Lordship (as it were) of the Feete, wherein the Master doth much ioy when he walketh about the Line of his owne Possessions: So there is a Lordship likewise of the Eye which being a raunging, and imperious, and (I might say) an usurping Sence, can indure no narrow circumscription; but must be fedde, both with extent and varietie. Yet on the other side, I finde vaste and indefinite views which drowne all apprehension of the uttermost Obiects, condemned, by good Authors, as if thereby some part of the

pleasure (whereof we speake) did perish. Lastly, I remember a private Caution, which I know not well how to sort, unlesse I should call it Political. By no meanes, to build too neere a great Neighbour ; which were in truth to bee as unfortunately seated on the earth, as Mercurie is in the Heavens, for the most part, ever in combustion, or obscuritie, under brighter beames then his owne.

Ioannes
Heurnius
Instit : Me-
dicin : lib. 7.
cap. 2.

From these severall Knowledges as I have said, and perhaps from some other doe Architects derive their Doctrine about election of Seats : wherin I have not beene so severe, as a great Scholer of our time, who precisely restrayneth a perfect Scituation, at least for the maine point of health, *Ad locum contra quem Sol radios suos fundit cum sub Ariete oritur*, That is, in a word hee would have the first salutation of the Spring. But such Notes as these, wheresoever we finde them in grave or slight Authors, are to my conceite rather wishes then Precepts ; and in that qualitie, I will passe them over. Yet I must withall say that in the seating of our selves (which is a kinde of Marriage to a Place) Builders should bee as circumspect as Wooers ; lest when all is done that Doome

befall us, which our Master doth lay upon Mitylene: A Towne in truth (saith hee) finely built, but foolishly planted. And so much touching that, which I termed the Totall Posture.

The next in Order is the placing of the Parts; About which (to leave as little as I may in my present labour, unto Fancie, which is wilde and irregular) I will propound a Rule of mine owne Collection, upon which I fell in this maner. I had noted, that all Arte was then in truest perfection, when it might bee reduced to some naturall Principle. For what are the most iudicious Artisans but the Mimiques of Nature? This led me to contemplate the Fabrique of our owne Bodies, wherein the High Architect of the world, had displaied such skill, as did stupifie, all humane reason. There I found the Hart as the fountaine of Life placed about the Middle, for the more equall communication of the vitall spirits. The Eyes seated aloft, that they might describe the greater Circle within their view. The Armes projected on each side, for ease of reaching. Briefly (not to loose our selves in this sweet speculation) it plainly appeareth, as a Max-

*Oppidum
quidem
ædificatum
elegantè
sed impru-
denter
positum.*

[Vitr. lib. 1,
cap. 6.]

ime drawne from the Divine light; That the Place of every part, is to be determined by the Use.

So then, from naturall structure, to proceed to Artificiall; and in the rudest things, to preserve some Image of the excellentest. Let all the principall chambers of Delight, All Studies and Libraries, be towards the East: For the Morning is a friend to the Muses. All Offices that require heat, as Kitchens, Stillatories, Stoves, roomes for Baking, Brewing, Washing, or the like, would be Meridionall. All that need a coole and fresh temper, as Cellers, Pantries, Butteries, Granaries, to the North. To the same side likewise, all that are appointed for gentle Motion, as Galleries, especially in warme Climes, or that otherwise require a steadie and unvariable light, as Pinacothecæ (saith Vitruvius) by which he intendeth, (if I may guesse at his Greeke, as wee must doe often even at his Latine) certaine Repositories for workes of rarity in Picture or other Arts, by the Italians called Studioli, which at any other Quarter, where the course of the Sunne doth diversifie the Shadowes, would loose much of their grace. And by this Rule

having alwayes regarde to the Use, any other Part may bee fitly accommodated.

I must here not omit to note that the Ancient Grecians, and the Romanes by their example in their buildings abroad, where the Seat was free, did almost Religiously scituate the Front of their houses, towards the South; perhaps that the Masters Eye, when hee came home, might not be dazeled, or that being illustrated, by the Sunne, it might yeeld the more gracefull Aspect; or some such reason. But from this, the Moderne Italians doe varie; wherof I shall speake more in another place. Let thus much suffice at the present for the Position of the severall Members, wherein must bee had as our Author doth often insinuate, and especially lib. 6. cap. 10. a singular regard, to the nature of the Region: Every Nation, being tyed above al Rules whatsoever, to a discretion, of providing against their owne Inconveniences: And therefore a good Parler in Ægypt would perchance make a good Celler in England.

There now followeth the second Branch of the generall Section touching the Worke.

In the Worke, I will first consider the

principall parts, and afterwards the Accessorie, or Ornaments; And in the Principall, first the Preparation of the Materials, and then the Disposition, which is the Forme.

Now, concerning the Materiall part; Although surely, it cannot disgrace an Architect, which doth so well become a Philosopher, to looke into the properties of Stone and Wood: as that Firre Trees, Cypresses, Cedars, and such other Aereall aspiring Plants, being by a kinde of naturall rigour (which in a Man I would call pride) inflexible downewards are thereby fittest for Posts or Pillars or such upright use; that on the other side, Oake, and the like true hartie Timber being strong in all positions, may bee better trusted in crosse and traverse worke, for Summers, or guirding and binding beames, as they tearme them. And so likewise to observe of Stone, that some, are better within, and other to beare Weather: Nay, to descend lower even to examine Sand and Lyme, and Clay (of all which things Vitruvius hath discoursed, without any daintines, & the most of new Writers) I say though the Speculative part of such knowledge be liberall: yet to redeeme this

Profession, and my present paynes, from indignitie ; I must heere remember that to choose and sort the materials for every part of the Fabrique, is a Dutie more proper to a second Superintendent, over all the Under Artisañs called (as I take it) by our Author, Officinators lib. 6. cap. 11. and in that Place expressly distinguished, from the Architect, whose glory doth more consist, in the Designement and Idea of the whole Worke, and his truest ambition should be to make the Forme, which is the nobler Part (as it were) triumph over the Matter : whereof I cannot but mention by the way, a forreigne Paterne, namely the Church of Santa Giustina in Padova : In truth a sound piece of good Art, where the Materials being but ordinarie stone, without any garnishment of sculpture, doe yet ravish the Beholder, (and hee knowes not how) by a secret Harmony in the Proportions. And this indeede is that end, at which in some degree, we should ayme even in the privatest workes : whereunto though I make haste, yet let me first collect, a few of the least triviall cautions, belonging to the Materiall Provision.

Leon Batista Alberti, is so curious, as to

wish all the Timber, cut out of the same Forrest, and al the Stone, out of the same Quarrie.

Philibert de l'Orme the French Architect goes yet somewhat further, and would have the Lyme made of the very same Stone, which wee intend to imploy in the Worke; as belike imagining that they will sympathize and ioyn the better, by a kinde of Originall kindred. But such conceits as these seeme somewhat too fine among this Rubbage, though I doe not produce them in sport. For surely the like agreements of nature, may have oftentimes a discreet application to Art. Alwayes it must be confessed, that to make Lyme without any great choyce of refuse stuffe, as we commonly do, is an English error, of no small moment in our Buildings. Whereas the Italians at this day, and much more the Ancients did burne their firmest stone, and even fragments of Marble where it was copious, which in time became almost Marble againe, or at least of indissoluble duritie, as appeareth in the standing Theaters. I must here not omit, while I am speaking of this part, a certain forme of Bricke described



by Daniele Barbaro Patriarch of Aquileia, in the largest Edition of his Commentary upon Vitruvius. The Figure triangular, every side a foot long, and some inch and a halfe thicke, which he doth commend unto us for many good conditions: As that they are more commodious in the management, of lesse expence, of fayrer show, adding much beautie & strength to the Murall Angles, where they fall gracefully into an indented Worke: so as I should wonder that wee have not taken them into use, being propounded by a man of good authoritie in this knowledge; but that all Nations doe start at Novelties, and are indeede maried to their owne Moulds. Into this place might aptly fall a doubt, which some have wel moved; whether the ancient Italians did burne their Bricke or no; which a passage or two in Vitruvius hath left ambiguous. Surely where the Naturall heat is strong enough, to supply the Artificiall, it were but a curious folly to multiply both Labour and Expence. And it is besides very probable, that those Materials with a kindely and temperate heate would prove fairer, smoother and lesse distorted, then with a violent:

Onely, they suffer two exceptions. First, that by such a gentle drying much time will bee lost which might otherwise bee employed in compiling. Next, That they will want a certaine sucking and soaking Thirstinesse, or a fiery appetite to drinke in the Lime, which must knit the Fabrique. But this question may be confined to the South, where there is more Sunne and patience. I will therefore not hinder my course, with this incident scruple, but close that part which I have now in hand, about the Materialls, with a principall caution: That sufficient Stuffe and Money bee ever ready before we beginne: For when wee build now a piece, and then another by Fits, the Worke dries and sinkes unequally, whereby the Walles growe full of Chinques, and Crevices; Therefore such pawings are well reprovved by Palladio, lib. 1. cap. 1. and by all other. And so having gleaned these few remembrances, touching the preparation of the Matter, I may now proceede to the Disposition thereof, which must forme the Worke. In the Forme, as I did in the Seate, I will first consider the generall Figuration, and then the severall Members.

Figures are either simple or Mixed. The simple be either Circular or Angular. And of Circular, either Compleate, or Deficient, as Ovals, with which kindes I will bee contented, though the Distribution might bee more curious.

Now the exact Circle is in truth a Figure, which for our purpose hath many fit and eminent properties; as fitnessse, for Commodity and Receit, being the most capable; fitnessse for strength and duration, being the most united in his parts; Fitnessse for beautie and delight, as imitating the celestiall Orbes, and the universall Forme. And it seemes, besides, to have the approbation of Nature, when shee worketh by Instinct, which is her secret Schoole: For birds doe build their nests Spherically: But notwithstanding these Attributes, it is in truth a very unprofitable Figure in private Fabriques, as being of all other the most chargeable, and much roome lost in the bending of the Walles, when it comes to bee divided: besides an ill distribution of light, except from the Center of the Roofe. So as antiently it was not usual, save in their Temples and Amphi-Theaters, which

needed no Compartitions. The Ovals and other imperfect circular Formes, have the same exceptions, and lesse benefite of capacity: So as there remaines to bee considered in this generall survey of Figures, the Angular, and the Mixed of both. Touching the Angular, it may perchance sound somewhat strangely, but it is a true observation, that this Art doth neither love many Angles nor few. For first, the Triangle which hath the fewest sides and corners, is of all other the most condemned, as being indeed both incapable and infirme (wherof the reason shall be afterwards rendred) and likewise unresolvable into any other regular Forme then it selfe, in the inward Partitions.

As for Figures of five, six, seven, or more Angles; They are surely fitter for Militarie Architecture, where the Bulworks may be layed out at the Corners, and the sides serve for Curtaines, then for civill use; though I am not ignorant of that famous Piece at Caprarola, belonging to the house of Farnese, cast by Baroccio into the forme of a Pentagone, with a Circle inscribed, where the Architect did ingeniously wrestle with divers inconveniences in dis-

[Or rather
Giacomo
Barazzi,
called
Vignola.]

posing of the Lights, and in saving the vacuities. But as designes of such nature doe more ayme at Rarity, then Commoditie: so for my part I had rather admire them, then commend them.

These things considered, we are both by the Precepts and by the Practise of the best Builders, to resolve upon Rectangular Squares, as a meane betweene too few, and too many Angles; and through the equall inclination of the sides (which make the right Angle) stronger then the Rhombe, or Losenge, or any other irregular Square. But whether the exact Quadrat, or the long Square be the better, I finde not well determined, though in mine owne conceit I must preferre the latter; provided that the Length doe not excéede the Latitude above one third part, which would diminish the beauty of the Aspect, as shall appeare when I come to speake of Symmetry and Proportion.

Of mixed Figures, partly Circular, and partly Angular, I shall neede to say nothing; because having handled the simple already, the mixed according to their composition, doe participate of the same respects. Onely

against these, there is a proper Obiection, that they offend Uniformity: Whereof I am therefore opportunely induced to say somewhat, as farre as shal concerne the outward Aspect, which is now in Discourse.

In Architecture, there may seem to be two opposite affectations, Uniformitie and Varietie, which yet will very well suffer a good reconciliation, as we may see in the great Paterne of Nature, to which I must often resort: For surely there can be no Structure, more uniforme, then our Bodies in the whole Figuration: Each side agreeing with the other, both in the number, in the qualitie, and in the measure of the Parts: And yet some are round, as the Armes, some flat, as the Hands, some prominent, and some more retired: So as upon the Matter, wee see that Diversitie doth not destroy Uniformitie, and that the Limmes of a noble Fabrique, may bee correspondent enough, though they be various; Provided alwayes, that we doe not runne into certaine extravagant Inventions, whereof I shall speake more largely, when I come to the parting and casting of the whole Worke. We ought likewise to avoyde Enormous

heights of sixe or seven Stories, as well as irregular Formes; and the contrary fault of low-distended Fronts, is as unseemely: Or againe, when the Face of the Building, is narrow and the Flank deepe; To all which extreames, some particular Nations, or Townes, are subiect, whose Names may be civilly spared: And so much for the generall Figuration, or Aspect of the Worke.

Now concerning the Parts in Severaltie. All the parts of every Fabrique, may be comprised under five Heads, which Division I receive from Batista Alberti, to doe him right. And they be these.

The Foundation.

The Walles.

The Appertions or Overtures.

The Compartition.

And the Cover.

About all which I purpose to gather the principall Cautions, and as I passe along, I will touch also the naturall Reasons of Art, that my discourse may be the lesse Mechanicall.

First then concerning the Foundation, which requireth the exactest care; For if that happen to dance, it will marre all the

ninth in the House : Therefore, that wee may found our Foundation firmly, we must first examine the Feet of Earth (as I may teach it,) upon which we will Build : and then the underpillings, or Substruction, as the Ancients did call it : For the former, we have a general precept in Vitruvius twice precisely repeated by him, as a point indeed of maxime consequence, first lib. 1. cap. 5. And againe more fully lib. 3. cap. 3. in these words as Philander hath well corrected the vulgar Copies.

Substructionis Fundamentis fortioribus (saith he) *si quærit interiori ad solidum, & in solido.* By which words I conceive him to commend unto us, not onely, a diligent, but even a iealous examination what the Soile will beare : advising us, not to rest upon any appearing Soliditie, unlesse the whole Mould through which wee cut, have likewise beene solid ; But how deepe wee should goe in this search, hee hath no where to my remembrance determined, as perhaps depending more upon Discretion, then Regularitie, according to the weight of the Worke ; yet Andrea Palladio hath sairely adventured to reduce it into Rule :

Allowing for that Cavazione (as he calleth it) a sixt part of the height of the whole Fabrique, unles the Cellers be under ground, in which case hee would have us, (as it should seeme) to sound somewhat lower.

Underdig-
ing, or Hol-
lowing of
the Earth.

Some Italians doe prescribe, that when they have chosen the Floore, or Plot, and laid out the Limits of the Worke, wee should first of all Digge Wels and Cesternes, and other under-conducts and conveiances, for the Suillage of the House, whence may arise a double benefit, for both the Nature of the Mould or Soile, would thereby be safely searched, and moreover those open vents, will serve to discharge such Vapours, as having otherwise no issue might peradventure shake the Building. This is enough for the naturall Grounding, which though it bee not a part of the solid Fabrique, yet here was the fittest place to handle it.

There followeth the Substruction, or Ground-worke of the whole Edifice, which must sustaine the Walles; and this is a kinde of Artificiall foundation, as the other was Natural. About which these are the chiefe Remembrances. First, that the bot-tome be precisely levell, where the Italians

therefore commonly lay a platforme of good Bord; Then that the lowest Ledge or Row be meere of Stone, and the broader the better, closely layd without Morter, which is a generall caution for all parts in Building, that are contiguous to Bord or Timber, because Lime and Wood are insociable, and if any where unfit confiners, then most especially in the Foundation. Thirdly, that the bredth of the Substruction bee at least double to the insistent Wall, and more or lesse, as the weight of the Fabrique shall require; for as I must againe repeate, Discretion may be freer then Art. Lastly, I finde in some a curious precept, that the Materials below, be layd as they grew in the Quarrie, supposing them belike to have most strength in their Naturall and Habit-uall Posture. For as Philippe de l'Orme observeth, the breaking or yeelding of a stone in this part, but the bredth of the backe of a knife, will make a Cleft of more then half a foot in the Fabrique aloft. So important are Fundamentall errors. Among which notes I have sayd nothing of Pallification, or Pyling of the Ground-plot, commanded by Vitruvius, when we build upon

a moist or marshy soile, because that were an error in the first choyce. And therefore all Seats that must use such provision below (as Venice for an eminent example) would perhaps upon good enquiry, be found to have beene at first chosen by the counsell of Necessity.

Now the Foundation being searched, and the Substruction layd, wee must next speake of the Wals.

Wals are either entire and continuall, or intermitted; and the Intermissions be either Pillars or Pylasters; for here I had rather handle them, then as some others doe, among Ornaments.

The entire Muring is by Writers diversly distinguished: By some, according to the quality of the Materials, as either Stone or Brick, &c. where, by the way, let me note, that to build Wals and greater Workes of Flint, whereof wee want not example in our Iland, & particularly in the Province of Kent, was (as I conceive) meerly unknown to the Ancients, who observing in that Materiall, a kinde of Metalicall Nature, or at least a Fusibility, seeme to have resolved it into nobler use; an Art now utterly lost,

or perchance kept up by a few Chymicks. Some againe doe not so much consider the quality, as the Position of the sayd Materials: As when Bricke or squared stones are laid in their lengths with sides and heads together, or their points conjoynd like a Networke (for so Vitruvius doth call it *reticulatum opus*) of familiar use (as it should seeme) in his Age, though afterwards growne out of request, even perhaps for that subtile speculation which hee himselfe toucheth; because so layd, they are more apt in swagging down, to pierce with their points, then in the iacent Posture, and so to crevice the Wall: But to leave such cares to the meaner Artificers, the more essentiall are these.

That the Walles bee most exactly perpendicular to the Ground-worke: for the right Angle (thereon depending) is the true cause of all Stability, both in Artificiall and Naturall positions; A man likewise standing firmest, when he stands uprightest. That the massiest and heaviest Materials bee the lowest, as fitter to beare, then to be borne. That the Worke as it riseth, diminish in thickness proportionally, for ease both of weight, and of expence. That certaine

courses or Ledges of more strength then the rest, be interlayed like Bones, to sustaine the Fabrique from totall ruine, if the under parts should decay. Lastly, that the Angles bee firmly bound, which are the Nerves of the whole Edifice, and therefore are commonly fortified by the Italians, even in their Bricke buildings, on each side of the corners, with well squared stone, yeelding both strength and grace. And so much touching the entire or solid Wall.

The intermissions (as hath beene sayd) are either by Pillars, or Pylasters.

Pillers which we may likewise call Columnnes (for the word among Artificers is almost naturallized) I could distinguish into Simple & Compounded. But (to tread the beaten and plainest way) there are five Orders of Pillers, according to their dignity and perfection, thus marshalled :

The Tuscan.

The Dorique.

The Ionique.

The Corinthian.

And the Compound Order, or as some call it the Roman, others more generally the Italian.

In which five Orders I will first consider their Communities, and then their Proprieties.

Their Communities (as farre as I observe) are principally three. First, they are all Round; for though some conceive *Columna Atticurgæ* mentioned by Vitruvius, lib. 3. cap. 3. to have beene a squared Pillar, yet wee must passe it over as irregular, never received among these Orders, no more then certaine other licentious inventions, of Wreathed, and Vined, and Figured Columns, which our Author himselfe condemneeth, being in his whole Booke a professed enemy to Fancies.

Secondly, they are all Diminished, or Contracted insensibly, more or lesse, according to the proportion of their heights, from one third part of the whole Shaft upwards, which Philander doth prescribe by his owne precise measuring of the Ancient remainders, as the most gracefull Diminution. And here I must take leave to blame a practice growne (I know not how) in certaine places too familiar, of making Pillars swell in the middle, as if they were sicke of some Tympany, or Dropsie, without any

Authentique Paterne or Rule, to my knowledge, and unseemely to the very iudgement of sight. True it is that in Vitruvius, lib. 3. cap. 2. wee finde these words, *De adiectione, quæ adijcitur in medijs Columnis, quæ apud Grecos* ^{ΕΥΡΑΓΙΣ} *appellatur, in extremo libro erit formatio eius*; which passage, seemeth to have given some countenance to this error. But of the promise there made, as of diverse other elsewhere, our Master hath fayled us, either by slip of memory, or iniury of time, and so wee are left in the darke. Alwayes sure I am, that besides the authority of example which it wanteth, It is likewise contrary to the Originall and Naturall Type, in Trees, which at first was imitated in Pillars, as Vitruvius himselfe observeth, lib. 5. cap. 1. For who ever saw any Cypresse, or Pine, (which are there alledged) small below and above, and tumerous in the middle, unlesse it were some diseased Plant, as Nature (though otherwise the comliest Mistresse) hath now and then her deformities and Irregularities.

Thirdly, they have all their Undersettings, or Pedistals, in height a third part of the whole Columnne, comprehending the

Base and Capitall; and their upper Adjuncts, as Architrave, Frize, and Cornice, a fourth part of the sayd Pillar; which rule of singular use and facility I find settled by Iacobo Baroccio, and hold him a more credible Author, as a man that most intended this piece, then any that vary from him in those Dimentions.

These are their most considerable Communities and agreements.

Their Proprieties or Distinctions will best appeare by some reasonable description of them all, together with their Architraves, Frizes, and Cornices, as they are usually handled.

First therefore the Tuscan is a plain, massie, rurall Pillar, resembling some sturdy well-limmed Labourer, homely clad, in which kinde of comparisons Vitruvius himselfe seemeth to take pleasure, lib. 4. cap. 1. The length thereof shall be six Diameters, of the grossest of the Pillar below. Of all proportions, in truth, the most naturall; For our Author tells us, lib. 3. cap. 1. that the foote of a man is the sixt part of his bodie in ordinary measure, and Man himselfe, according to the saying of Protagoras (which

Aristotle doth somewhere vouchsafe to celebrate) is τὸ τῶν ἀπάντων χρημάτων μέτρον: as it were the Prototype of all exact Symmetrie, which we have had other occasion to touch before: This Columne I have by good warrant called Rurall, Vitru. cap. 2. lib. 3. And therefore we need not consider his rank among the rest. The distance or Inter-columniation (which word Artificers doe usually borrow) may bee neere foure of his owne Diameters, because the Materials commonly layd over this Pillar, were rather of wood then stone; through the lightnesse whereof the Architrave could not suffer, though thinnely supported, nor the Columne it selfe being so substantiall. The Contraction aloft shall be (according to the most received practice) one fourth part of his thicknesse below. To conclude, (for I intend only as much as shall serve for a due Distinguishment, and not to delineate every petty member) the Tuscan is of all the rudest Pillar, and his principall Character Simplicity.

The Dorique Order is the gravest that hath beene received into civill use, preserving, in comparison of those that follow,

a more Masculine Aspect, and little trimmer then the Tuscan that went before, save a sober garnishment now and then of Lions heads in the Cornice, and of Triglyphs and Metopes alwayes in the Frize. Sometimes likewise, but rarely, chaneled, and a little slight sculpture about the Hypotrachelion, or Necke under the Capitall. The length, seven Diameters. His ranke or degree, is the lowest by all Congruity, as being more massie then the other three, and consequently abler to support. The Intercolumniation, thrice as much as his thicknesse below. The Contraction aloft, one fift of the same measure. To discerne him, will bee a peece rather of good Heraldry, then of Architecture: For he is best knowne by his place, when he is in company, and by the peculiar ornament of his Frize (before mentioned) when he is alone.

The Ionique Order doth represent a kinde of Feminine slendernesse, yet saith Vitruvius, not like a light Housewife, but in a decent dressing, hath much of the Matrone. The length eight Diameters. In degree as in substantialnesse, next above the Dorique, sustayning the third, and

adorning the second Story. The Inter-columniation two of his owne Diameters. The Contraction one sixt part. Best knowne by his trimmings, for the bodie of this Columne is perpetually chaneled, like a thicke plighted Gowne. The Capitall dressed on each side, not much unlike womens Wires, in a spirall wreathing, which they call the Ionian Voluta. The Cornice indented. The Frize swelling like a pillow; And therefore by Vitruvius, not unelegantly tearmed Pulvinata. These are his best Characters.

The Corinthian, is a Columne, laciviously decked like a Curtezane, and therein much participating (as all Inventions doe) of the place where they were first borne: Corinthe having been without controversie one of the wantonest Townes in the world. This Order is of nine Diameters. His degree, one Stage above the Ionique, and alwaies the highest of the simple Orders. The Inter-columniation two of his Diameters, and a fourth part more, which is of all other the comeliest distance. The Contraction one seventh Part. In the Cornice both Dentelli and Modiglioni. The Frize, adorned with all kinds of Figures and various Compart-

Our Artizans call them Teeth and Cartouzes.

ments at Pleasure. The Capitall, cut into the beautifullest leafe, that Nature doth yeeld, which surely next the Aconitum Pardalianches (reiected perchance as an ominous Plant) is the Acanthus or Branca Ursina though Vitruvius doe impute the choice thereof unto Chance, and wee must be contented to beleeeve him: In short, As Plaine-nesse did Characterize the Tuscan, so must Delicacie and Varietie the Corinthian Pillar, besides the height of his Ranke.

The last is the Compounded Order: His name being a briefe of his Nature. For this Pillar is nothing in effect, but a Medlie, or an Amasse of all the precedent Ornaments, making a new kinde, by stealth, and though the most richly tricked, yet the poorest in this, that he is a borrower of all his Beautie. His length, (that he may have somewhat of his owne) shalbe of ten Diameters. His degree should, no doubt, bee the highest by reasons before yeelded. But few Palaces Auncient or Moderne excede the third of the Civill Orders. The Intercolumniation, but a Diameter and an halfe, or alwayes somewhat lesse then two. The Contraction of this Pillar must be one eight Part lesse

above then belowe. To know him will be easie by the verie mixture of his Ornaments, and Cloathing.

And so much touching the five Orders of Columnes, which I will conclude with two or three, not impertinent Cautions :

First, that where more of these Orders then one, shalbe set in severall Stories or Contignations, there must bee an exquisite care, to place the Columnes precisely, one over another, that so, the solid may answere to the solid, and the vacuities to the vacuities, as well for Beautie, as strength of the Fabrique : And by this Caution the Consequence is plaine, that when wee speake of the Intercolumniation or distance, which is due to each Order, we meane in a Dorique, Ionicall, Corinthian Porch, or Cloister, or the like of one Contignation, and not in Storied buildings.

Secondly, let the Columnes above be a forth part lesse then those below, saith Vitruvius, lib. 5. cap. 1. A strange Precept, in my opinion, and so strange, that peradventure it were more sutable, even to his owne Principles, to make them rather a fourth Part greater, For lib. 3. cap. 2. where our

Master handleth the Contractions of Pillars, wee have an Optique Rule, that the higher they are, the lesse should be alwayes their diminution aloft, because the Eye it selfe, doth naturally contract all Objects more or lesse, according to the Distance; which consideration, may, at first sight, seeme to have beene forgotten in the Caution wee have now given; but Vitruvius (the best Interpreter of himselfe) hath in the same place of his fift Booke, well acquitted his memorie by these words: *Columnæ superiores, quarta parte minores, quàm inferiores, sunt constituendæ; propterea quòd operi ferendo, quæ sunt inferiora firmiora esse debent*; preferring like a wise Mechanick, the naturall Reason, before the Mathematicall, and sensible conceits before abstracted. And yet lib. 4. cap. 4. he seemeth againe, to affect Subtiltie, allowing pillars the more they are chaneled, to bee the more slender; because while our Eye (saith hee) doth as it were distinctly measure, the eminent and the hollowed Parts, the Totall Object appeareth the bigger, and so as much as those excavations, doe subtract, is supplied by a Fallacie of the Sight: But here mee thinks,

our Master should likewise have rather considered, the naturall Inconvenience; for though Pillars by chaneling, bee seemingly ingrossed to our Sight, yet they are truly weakened in themselves; and therefore ought perchance in sound reason not to bee the more slender, but the more Corpulent, unlesse apparances preponder truths, but *Contra Magistrum, non est disputandum.*

A third Caution shalbe that all the projected or Iutting Parts (as they are tearmed) be very moderate, especially, the Cornices of the lower Orders, for whilest some thinke to give them, a beautifull and royall Aspect, by their largenesse, they sometimes hinder both the Light within, (whereof I shall speake more in due place) and likewise detract much from the viewe of the Front without, as well appeareth in one of the principall Fabriques at Venice, namely the Palace, of the Duke Grimani on the Canal Grande, which by this magnificent errour, is somewhat disgraced: I neede now say no more concerning Columnes & their Adjuncts, about which Architects make such a noyse in their Bookes, as if the very tearmes of Architraves, and Fries, and

Cornices, and the like, were enough to graduate a Master of this Art ; yet let me before I passe to other matter, prevent a familiar Obiection ; It will perchance bee said, that all this Doctrine touching the five Orders, were fitter for the Quarries of Asia which yeelded 127 Columnes of 60 Foote high, to the Ephesian Temple, or for Numidia where Marbles abound ; then for the Spirits of England, who must be contented with more ignoble Materials : To which I answere, that this neede not discourage us : For I have often at Venice viewed with much pleasure, an Atrium Græcum (we may translate it an Anti porch, after the Greeke manner) raised by Andrea Palladio, upon eight Columnes of the Compounded Order ; The Bases of Stone, without Pedistals, The shafts or Bodies, of meere Brick ; three foote and an halfe thicke in the Diameter below, and consequently thirty five foote high, as himselfe hath described them in his second Booke ; Then which, mine Eye, hath never yet beheld any Columnes, more stately of Stone or Marble ; For the Bricks, having first beene formed in a Circular Mould, and then cut before their burning

into foure quarters or more, the sides afterwards ioyne so closely, and the points concenter so exactly, that the Pillars appeare one entire Peece ; which short description, I could not omit, that thereby may appeare, how in truth wee want rather Art then stuffe, to satisfie our greatest Fancies.

After Pillars, the next in my distribution, are Pylasters, mentioned by Vitruvius, lib. 5. cap. 1. and scant any where else under the name of Parastatæ, as Philander conceiveth, which Grammaticall point (though perchance not very cleere) I am contented to examine no farther. Alwayes, what we meane by the thing it selfe, is plaine enough in our owne vulgar; Touching which, I will briefly collect the most considerable notes.

Pylasters, must not bee too tall and slender, least they resemble Pillars, nor too Dwarfish and grosse, least they imitate the Piles or Peeres of Bridges: Smoothnesse doth not so naturally become them, as a Rusticke Superficies, for they ayme more at State & Strength, then Elegancie. In private Buildings they ought not to be narrower, then one Third, nor broader then two parts of the whole Vacuity, betweene

Pylaster and Pylaster; but to those that stand at the Corners, may be allowed a little more Latitude by discretion, for strength of the Angles: In Theaters and Amphitheaters, and such weighty Workes, Palladio observeth them, to have beene as broad as the halfe, and now and then as the whole Vacuitie: Hee noteth likewise (and others consent with him) that their true Proportion, should bee an exact Square; But for lessening of expence, and inlarging of roome, they are commonly narrower in Flanke, then in Front: Their principall Grace doth consist in halfe or whole Pillars, applied unto them; in which case it is well noted by Authors, that the Columnes may bee allowed somewhat above their ordinary length, because they leane unto so good Supporters. And thus much shall suffice touching Pilasters, which is a cheape, & a strong, and a noble kinde of Structure.

Now because they are oftner, both for Beauty and Maiesty, found Arched, then otherwise; I am heere orderly led to speake of Arches, and under the same head of Vaults: for an Arch is nothing indeed but a contracted Vault, and a Vault is but a

dilated Arch : Therefore to handle this Piece both compendiously, and fundamentally, I will resolve the whole businesse into a few Theoremes.

Theoreme 1.

All solid Materials free from impediment, doe descend perpendicularly downewards, because ponderosity is a naturall inclination to the Center of the World, and Nature performeth her motions by the shortest lines.

Theoreme 2.

Brickes moulded in their ordinary Rectangular forme, if they shall be layd one by another in a leuell row, betweene any Supporters sustayning the two ends, then all the pieces between, will necessarily sinke, even by their owne naturall Gravity, and much more if they suffer any depression by other waight above them, because their sides being paralell, they have roome to descend perpendicularly, without impeachment, according to the former Theoreme ; Therefore to make them stand, wee must either change their Posture, or their Figure, or both.

Theoreme 3.

If Bricks moulded, or Stones squared Cuneatim (that is, Wedge wise, broader above then below) shall be layd in a Row leuell, with their ends supported, as in the precedent Theoreme, pointing all to one Center; then none of the pieces betweene can sinke till the Supporters give way, because they want roome in that Figuration, to descend perpendicularly. But this is yet a weake piece of Structure, because the Supporters are subiect to much impulsion, especially if the line be long; for which reason this Forme is seldome used, but over Windowes, or narrowe Doores. Therefore to fortifie the Work as in this third Theoreme wee have supposed the Figure of all the Materials different from those in the second: So likewise wee must now change the Posture, as will appeare in the Theoreme following.

Theoreme 4.

If the Materials figured as before Wedge-wise, shall not be disposed levelly, but in forme of some Arch, or portion of a Circle, pointing all to the same Center: In this

case neither the pieces of the sayd Arch, can sinke downewards, through want of roome to descend perpendicularly: Nor the Supporters or Butments (as they are tearmed) of the sayd Arch can suffer so much violence, as in the precedent flat Posture, for the roundnesse will alwayes make the Incumbent waight, rather to rest upon the Supporters, then to shove them; whence may be drawn an evident Corolary; that the safest of all Arches is the Semicircular, and of all Vaults the Hemisphere, though not absolutely exempted from some naturall weakenesse, as Barnardino Baldi Abbot of Guastalla, in his Commentary upon Aristotles Mechaniques, doth very well proove; where let me note by the way, that when any thing is Mathematically demonstrated weake, it is much more Mechanically weake: Errors ever occurring more easily in the management of Grosse Materials, then Lineall Designes.

By the first Theor.

Which is the sole prerogative of perpendicular lines and right Angles.

Theoreme 5.

As Semicircular Arches, or Hemispherical Vaults, being raised upon the totall

Diameter, bee of all other the roundest, and consequently the securest, by the precedent Theoreme: So those are the grace-fullest, which keeping precisely the same height, shall yet bee distended, one fourteenth part longer then the sayd entire Diameter; which addition of distent will conferre much to their Beauty, and detract but little from their Strength.

This observation I finde in Leon-Batista Alberti; But the practice how to preserve the same height, and yet distend the Armes or ends of the Arch, is in Albert Durers Geometry, who taught the Italians many an excellent Line, of great use in this Art.

Upon these five Theoremes, all the skill of Arching and Vaulting is grounded: As for those Arches, which our Artizans call of the third and fourth point; And the Tuscan writers *di terzo*, and *di quarto acuto*, because they alwayes concurre in an acute Angle, and doe spring from division of the Diameter, into three, foure, or more parts at pleasure; I say, such as these, both for the naturall imbecility of the sharpe Angle it selfe, and likewise for their very Uncomeliness, ought to bee exiled from judicious

eyes, and left to their first inventors, the Gothes or Lumbards, amongst other Reliques of that barbarous Age.

Thus of my first Partition of the parts of every Fabrique, into five Heads, having gone through the two former, & been incidently carried into this last doctrine touching Arches and Vaults. The next now in order are the Apertions; under which tearme I doe comprehend Doores, Windowes, Staircases, Chimnies, or other Conducts: In short, all Inlets or Outlets; To which belong two generall Cautions.

First, That they bee as few in number, and as moderate in Dimension, as may possibly consist with other due respects: for in a word, all Openings are Weaknings.

Secondly, That they doe not approach too neere the Angles of the Wals; for it were indeed a most essentiall Solecisme to weaken that part, which must strengthen all the rest: A precept well recorded, but ill practised by the Italians themselves, peticularly at Venice, where I have observed diverse Pergoli, or Meniana (as Vitruvius seemeth to call them, which are certaine ballised outstandings to satisfie curiosity of sight) very

dangerously set forth, upon the very point it selfe, of the Murall Angle.

Now, Albeit I make haste, to the casting and comparting of the whole Worke, (being indeede the very Definitive Summe of this Art, to distribute usefully and gracefully a well chosen Plot) yet I will first under their severall Heads, collect briefly some of the choicest notes belonging to these particular Overtures.

Of Doores and Windows.

These In lets of Men and of Light, I couple together, because I find their due Dimensions, brought under one Rule, by Leone Alberti (a learned Searcher) who from the Schoole of Pythagoras (where it was a fundamentall Maxime, that the Images of all things are latent in Numbers) doth determine the comeliest Proportion, betweene breadths and heights; Reducing Symmetrie to Symphonie, and the harmonie of Sounde, to a kinde of harmonie in Sight, after this manner: The two principall Consonances, that most ravish the Eare, are by consent of all Nature, the fift, and the Octave; whereof the first riseth radically,

from the proportion, betweene two and three. The other from the double Intervalle, betweene One and Two, or betweene Two and Foure &c. Now if we shall transport these proportions, from Audible to visible Objects; and apply them as they shall fall fittest (the nature of the Place considered) Namely in some Windowes, and Doores, the Symmetrie of Two to Three, in their Breadth and Length; In others the double as aforesaid; There will indubitably result from either, a gracefull and harmonious contentment, to the Eye; Which speculation though it may appeare unto vulgar Artizans, perhaps too subtile, and too sublime, yet wee must remember, that Vitruvius himselfe doth determine many things in his profession; by Musically grounds, and much commendeth in an Architect, a Philosophical Spirit; that is, he would have him (as I conceive it) to be no superficiall, and floating Artificer; but a Diver into Causes, and into the Mysteries of Proportion; Of the Ornaments, belonging both to Doores and Windowes, I shall speake in other place; But let mee heere adde one observation; That our Master (as

*Lumen est
diffusivum
sui & alieni.*

appeareth by divers passages, and particularly lib. 6. cap. 9.) seemes to have beene an extreame Lover of Luminous Roomes ; And indeede I must confesse that a Franke Light, can misbecome no Edifice whatsoever, Temples onely excepted ; which were anciently darke, as they are likewise at this day in some proportion. Devotion more requiring collected then defused Spirits. Yet on the other side we must take heede to make a House (though but for civill use) all Eyes, like Argus ; which in Northerne Climes would be too could, In Southerne, too hot : And therefore the matter indeede importeth more then a merry comparison. Besides, There is no part of Structure either more expencefull, then Windowes ; or more ruinous ; not onely for that vulgar reason, as being exposed to all violence of weather ; but because consisting of so different and unsociable pieces, as Wood, Iron, Leade, and Glasse, and those small and weake, they are easily shaken ; I must likewise remember one thing, (though it be but a Grammatical note) touching Doores. Some were Fores, & Some were Valvæ. Those (as the very word may seeme

to import) did open outwards, These inwards; And were commonly of two Leaves or Panes, (as we call them) thereby requiring indeed, a lesser Circuit in their unfolding; And therefore much in use among Italians at this day; But I must charge them with an Imperfection, for though they let in as well as the former, yet they keepe out worse.

Of Staire-cases.

To make a compleate Staire-case, is a curious peece of Architecture: The vulgar Cautions are these.

That it have a very liberall Light, against all Casualtie of Slippes, and Falles.

That the space above the Head, bee large and Airy, which the Italians use to call *Un bel-sfogolo*, as it were good Ventilation, because a man doth spend much breath in mounting.

That the Halfe-paces bee well distributed, at competent distances, for reposing on the way.

That to avoyd Encounters, and besides to gratifie the beholder, the whole Staire-case have no niggard Latitude, that is, for

the principall Ascent, at least ten foot in Royall Buildings.

That the breadth of every single Step or Staire bee never lesse then one foote, nor more then eighteen inches.

That they exceede by no meanes halfe a foot in their height or thicknesse ; for our Legges doe labour more in Elevation, then in Distention : These I say are familiar remembrances, to which let me adde ;

That the steps bee layd where they joyne *Con un tantino di scarpa* ; we may translate it somewhat sloaping, that so the foot may in a sort both ascend and descend together, which though observed by few, is a secret and delicate deception of the paines in mounting.

Lastly, to reduce this doctrine to some Naturall, or at least Mathematicall ground, (our Master, as we see, lib. 9. cap. 2.) borroweth those proportions, that make the sides of a Rectangular Triangle, which the Ancient Schoole did expresse in lowest termes, by the numbers of 3. 4. and 5. That is, Three for the Perpendicular, from the Staire-head to the ground ; Foure for the Ground-line it selfe, or Recession from

the wall; And Five for the whole Inclination or slopenesse in the ascent, which proportion, saith he, will make *Temperatas graduum librationes*. Hitherto of Staircases which are direct: There are likewise Spirall, or Cockle staires, either Circular, or Ovall, and sometimes running about a Pillar, sometimes vacant, wherein Palladio, (A man in this point of singular felicity) was wont to divide the Diameter, of the first sort into three parts, yeelding one to the Pillar, and two to the Steps; Of the second into foure, whereof he gave two to the Staires, and two to the Vacuitie, which had all their light from above, And this in exact Ovals, is a Master-piece.

Of Chimnies.

In the present businesse, Italians (who make very frugall fires,) are perchance not the best Counsellors. Therefore from them we may better learne, both how to raise faire Mantels within the roomes, and how to disguise gracefully the shafts of Chimnies abroad (as they use) in sundry formes (which I shall handle in the latter part of my labour) and the rest I will extract from Philippe

de l'Orme : In this part of his Worke more diligent, then in any other, or, to doe him right, then any man else.

First, hee observeth very soberly, that who in the disposition of any Building will consider the nature of the Region, and the Windes that ordinarily blow, from this, or that Quarter ; might so cast the roomes, which shall most need fire ; that hee should little feare the incommodity of Smoake, and therefore hee thinkes, that inconvenience, for the most part to proceede from some inconsiderate beginning. Or if the error lay not in the Disposition but in the Structure it selfe ; then hee makes a Logicall enquiry, That either the Winde is too much let in above, at the mouth of the Shafte, or the Smoke stifeled below ; If none of these, Then there is a repulsion of the Fume, by some higher Hill or Fabrique, that shall overtoppe the Chimney and worke the former effect : If likewise not this, Then he concludes, that the Roome which is infested, must bee necessarily both little and close, so as the smoke cannot issue by a naturall Principle, wanting a succession and supply of new Ayre.

Now, In these cases he suggesteth divers Artificiall remedies ; of which I will allow one, a little Description, because it savour-eth of Philosophie, and was touched by Vitruvius himselfe, lib. 1. cap. 6. but by this man ingeniously applied to the present use: Hee will have us provide two hollow brasse Balles of reasonable capacitie, with little holes open in both, for reception of Water, when the Aire shalbe first sucked out; One of these wee must place with the hole upwards, upon an yron Wire, that shall traverse the Chimney, a little above the Mantell, at the ordinary height of the sharpest heate or flames, whereof the water within being rarified, and by rarifaction resolved into Winde, will breake out, and so force up the smoke, which otherwise might linger in the Tunnell, by the way, and oftentimes revert; With the other, (saith he) wee may supply the place of the former, when it is exhausted, or for a neede blow the Fire in the meane while; Which Invention I have interposed for some little intertainment of the Reader; I will conclude with a note from Palladio, who observeth that the Ancients did warme their Roomes,

αἰδομένου δὲ πυρὸς
γαραρταγὸς οἶκος
ἰδεσθαι.

Hom. Epig.

with certaine secret Pipes that came through the Walles, transporting heate (as I conceive it) to sundry parts of the House, from one common Furnace; I am ready to baptize them Caliducts, as well as they are tearmed Venti-ducts, and Aquæducts that convey Winde and Water; which whether it were a custome or a delicacie, was surely both for thrift, and for use, far beyond the German Stoves; And I should preferre it likewise before our owne fashion, if the very sight of a fire, did not adde to the Roome a kinde of Reputation, as old Homer doth teach us in a verse, sufficient to proove that himselfe was not blinde, as some would laie to his charge.

Touching Conducts for the Suillage and other necessities of the House, (which how base soever in use, yet for health of the Inhabitants, are as considerable, and perhaps more then the rest) I finde in our Authors, this Counsell; That Art should imitate Nature, in those ignoble conveyances; and separate them from Sight, (where there wants a running Water) into the most remote, and lowest, and thickest part of the Foundation: with secret vents passing up

through the Walles like a Tunnell to the wilde Aire aloft: which all Italian Artizans commend for the discharge of noysome vapours, though else-where to my knowledge little practised.

Thus having considered the precedent Appertions, or Overtures, in severaltie according to their particular Requisites, I am now come to the casting and Contexture of the whole Worke, comprehended under the tearme of Compartition: Into which (being the mainest piece) I cannot enter without a few generall Precautions, as I have done in other Parts.

First therefore, Let no man that intendeth to build, setle his Fancie upon a draught of the Worke in paper, how exactly soever measured, or neatly set off in perspective; And much lesse upon a bare Plant thereof, as they call the Schiographia or Ground lines; without a Modell or Type of the whole Structure, and of every parcell and Partition in Pastboord or Wood.

Next that the said Modell bee as plaine as may be, without colours or other beautifying, lest the pleasure of the Eye preoccupate the Iudgement; which advise omitted by

the Italian Architects, I finde in Philippe de l'Orme, and therefore (though France bee not the Theater of best Buildings) it did merit some mention of his name.

Lastly, the bigger that this Type be, it is still the better, not that I will perswade a man to such an enormity, as that Modell made by Antonio Labaco, of Saint Peters Church in Rome, containing 22 foot in length, 16 in breadth, and 13 in height, and costing 4184 crownes: The price in truth of a reasonable Chappell: Yet in a Fabrique of some 40 or 50 thousand pounds charge, I wish 30 pounds at least layd out before hand in an exact Modell; for a little misery in the Premises, may easily breed some absurdity of greater charge, in the Conclusion.

Now, after these premonishments, I will come to the Compartition it selfe; By which the Authors of this Art (as hath beene touched before) doe understand, a gracefull and usefull distribution, of the whole Ground plot both for roomes of Office, and of Reception or Entertainment, as farre as the Capacity thereof, and the nature of the Countrey will comport. Which circum-

stances in the present Subiect, are all of maine consideration, and might yeeld more discourse then an Elementall Rapsodie will permit. Therefore (to anatomize briefly this Definition) the Gracefulnesse (whereof wee speake) will consist in double Analogie, or correspondencie. First, between the Parts and the Whole, whereby a great Fabrique should have great Partitions, great Lights, great Entrances, great Pillars or Pylasters ; In summe, all the Members great. The next betweene the Parts themselves, not only, considering their Breadths, and Lengths, as before, when wee spake of Doores and Windowes ; but here likewise enters a third respect of Height, a point (I must confesse) hardly reduceable to any generall precept.

True it is, that the Ancients did determine the Longitude of all Roomes, which were longer than broade, by the double of their Latitude, Vitruvius lib. 6. cap. 5. And the Heighth by the halfe of the breadth and length summed together, But when the Roome was precisely square, they made the Height half as much more as the Latitude ; which Dimensions the moderne Architects have taken leave to varie upon discretion :

Sometimes squaring the Latitude, and then making the Diagonall or overthwart Line, from Angle to Angle, of the said Square, the measure of the Heighth sometimes more, but seldome lower then the full breadth it selfe ; which boldnesse of quitting the old Proportions, some attribute first to Michael Angelo da Buonaroti, perchance upon the credite he had before gotten, in two other Arts.

The second point is Usefulnessse, which will consist in a sufficient Number of Roomes, of all sorts, and in their apt Coherence, without distraction, without confusion ; so as the beholder may not onely call it, *Una Fabrica ben raccolta*: as Italians use to speake of well united Workes, but likewise that it may appeare airie and spiritous, and fit for the welcome of cheerefull Guests ; about which the principall difficultie will bee in contriving the Lightes, and Staire-cases, whereof I will touch a note or two : For the first, I observe that the ancient Architects were at much ease. For both the Greekes and Romanes (of whose private dwellings Vitruvius hath left us some description) had commonly two

Cloysterd open Courts, one serving for the Womens side, and the other for the Men : who yet perchance now adayes would take so much seperation unkindly. Howsoever, by this meanes, the reception of light, into the Bodie of the building, was very prompt, both from without and from within : which we must now supplie either by some open Forme of the Fabrique, or among gracefull refuges, by Tarrasing any Storie, which is in danger of darkenesse ; or lastly, by perpendicular lights, from the Roofe : of all other the most naturall, as shalbe shewed anon. For the second difficultie : which is casting of the Stayre-cases ; That being in it selfe no hard point, but onely as they are incombrances of roome for other use : (which lights were not) I am therefore aptly moved heere to speake of them. And first of Offices.

I have marked a willingnesse, in the Italian Artisans, to destribute the Kychin, Pantrie, Bakehouse, washing Roomes, and even the Buttrie likewise, under ground ; next above the Foundation, and sometimes Level with the plaine, or Floore of the Cellar : raying the first Ascent into the

house Fifteene Foote or more for that Ende, which besides the benefit of removing such Annoyes out of sight, and the gayning of so much more roome above, doth also by elevation of the Front, adde Maiestie to the whole Aspect. And with such a disposition of the principall Stayre-case, which commonly doth deliver us, into the Plaine of the second Storie, there may bee wonders done, with a little roome, whereof I could alleadge brave Examples abroad ; and none more Artificiall, and Delicious, then a House built by Daniele Barbaro Patriarche of Aquileia before mentioned, among the memorable Commenters upon Vitruvius. But the Definition (above determined) doth call us to some consideration of our owne Countrie, where though all the other pettie Offices (before rehearsed) may well enough bee so remote, yet by the naturall Hospitalitie of England, the Buttrie must be more visible ; and wee neede perchance for our Raunges, a more spacious and luminous Kitchin, then the foresaid Compartition will beare ; with a more competent neerenesse likewise to the Dying Roome. Or else besides other Inconveniencies, perhapes

some of the Dishes may straggle by the way ; Heere let me note a common defect, that wee have of a very usefull Roome, called by the Italians *Il Tinello*; and familliar, nay almost essentiall, in all their great Families. It is a Place properly appointed, to conserve the meate that is taken from the Table, till the Waiters eate, which with us by an olde fashion, is more unseemely set by, in the meane while.

Now touching the distribution of Lodging chambers ; I must here take leave to reprove a fashion, which I know not how hath prevailed through Italie, though without ancient examples, as farre as I can perceive by Vitruvius. The thing I meane, is, that they so cast their partitions as when all Doors are open, a man may see through the whole House ; which doth necessariely put an intollerable servitude upon all the Chambers save the Inmost, where none can arrive, but through the rest ; or else the Walles must be extreame thicke for secret passages. And yet this also will not serve the turne, without at least Three doores to every Roome : A thing most insufferable, in cold & windie Regions, and every where

noe small weakening to the whole Worke ;
Therefore with us that want no cooling, I
cannot commend the direct opposition of
such Overtures, being indeede meerely
grounded upon the fond ambition of displaying to a Stranger all our Furniture at one Sight, which therefore is most maintained by them that meane to harbour but a few ; whereby they make onely advantage of the vanitie, and seldome prove the Inconvenience. There is likewise another defect (as absurdities are seldome solitarie) which will necessarily follow, upon such a servile disposing of inward Chambers. That they must bee forced to make as many common great Roomes, as there shalbe severall Stories ; which (besides that they are usually darke, a point hardly avoided, running as they doe, through the middle of the whole House) doe likewise devoure so much Place, that thereby they want other Galleries, and Roomes of Retreate, which I have often considered among them (I must confesse) with no small wonder ; for I observe no Nation in the World, by Nature more private and reserved, then the Italian, and on the other side, in no Habitations lesse

privacie ; so as there is a kinde of Conflict,
 betweene their Dwelling, and their Being :
 It might heere perchance bee expected, that
 I should at least describe (which others
 have done in draughts and designes) di-
 vers Formes of Plants and Partitions, and
 varieties of Inventions ; But speculative
 Writers (as I am) are not bound, to com-
 prise all particular Cases, within the Latitude
 of the Subiect, which they handle ; Generall
 Lights, and Directions, and pointings at
 some faults, is sufficient. The rest must be
 committed to the sagacitie of the Architect,
 who will bee often put to divers ingenious
 shifts, when hee is to wrestle with scarsitie
 of Ground. As sometimes to damme one
 Roome (though of speciall use) for the
 benefit and beautie of all the rest ; Another
 while, to make those fairest, which are most
 in Sight, and to leave the other (like a
 cunning Painter) in shadow, *cum multis*
alijs, which it were infinite to pursue. I
 will therefore close this Part touching Com-
 partition, as cheerefully as I can with a short
 description of a Feasting or entertayning
 Roome, after the Ægyptian manner, who
 seeme (at least till the time of Vitruvius)

The Italians
 call it *una*
stansa
dannata,
 as when a
 Buttrie is
 cast under a
 stayre-Case,
 or the like.

from the auncient Hebrewes and Phenicians (whence all knowledge did flow) to have retayned, with other Sciences, in a high degree, also the Principles, and practise of this magnificent Art. For as farre as I may coniecture by our Masters Text, lib. 6. cap. 5. (where as in many other Places he hath tortured his Interpreters) there could no Forme, for such a Royall use, bee comparably imagined, like that of the foresaide Nation, which I shall adventure to explaine.

Let us conceive a Floore or Area of goodly length, (For example, at least of 120 foote) with the breadth somewhat more then the halfe of the Longitude, whereof the reason shalbe afterwards rendred. About the two longest sides, and Head of the said Roome, shall runne an Order of Pillars, which Palladio doth suppose Corinthian (as I see by his designe) supplying that point out of Greece, because we know no Order, proper to Ægypt. The fourth side I wil leave free for the Entrance: On the foresaid Pillars was laid an Architrave, which Vitruvius mentioneth alone: Palladio addes thereunto (and with reason) both Freeze and Cornice, over which went up a con-

tinued Wall, and therein, halfe or three quarter Pillars, answering directly, to the Order below, but a fourth Part lesse, and betweene these halfe Columnes above, the whole Roome was windowed round about.

Now, from the lowest Pillars there was layd over a Contignation or Floore, borne upon the outward Wall, and the Head of the Columnes with Tarrace and Pavement, *Sub dio* (saith our Master) and so indeed hee might safely determine the matter in Egypt, where they feare no Clowds: Therefore Palladio (who leaveth this Tarrace uncovered in the middle, and ballised about) did perchance construe him rightly, though therein discording from others: Alwayes we must understand a sufficient breadth of Pavement, left between the open part and the Windowes, for some delight of Spectators, that might looke downe into the Roome: The Latitude I have supposed contrary to some former Positions, a little more then the halfe of the length; because the Pillars standing at a competent distance from the outmost Wall, will by interception of the Sight, somewhat in appearance diminish the breadth; In which cases, (as I

have touched once or twice before) Discretion may bee more licentious than Art. This is the description of an Egyptian roome, for Feastes and other Iollities. About the Walles whereof wee must imagine entire Statues, placed below, and illuminated by the descending Light, from the Tarrace, as likewise from the Windowes betweene the halfe Pillars above : So as this Roome had abundant and advantageous Light ; and besides other garnishing, must needs receive much State by the very heighth of the Roofe, that lay over two orders of Columnes : And so having runne through the foure parts of my first generall Division, namely, Foundation, Walles, Appertions, and Compartition ; the House may now have leave to put on his Hatte : having hitherto beene uncovered it selfe, and consequently unfit to cover others. Which point though it be the last of this Art in execution, yet it is alwayes in Intention the first, For who would build but for Shelter ? Therefore obtayning both the Place, and the dignity of a Finall cause, it hath beene diligently handled by diverse, but by none more learnedly then Bernardino Baldi Abbot of Guastalla (before cited upon

other occasion) who doth fundamentally, and Mathematically demonstrate the firmest Knittings of the upper Timbers, which make the Roofe. But it hath beene rather my Scope, in these Elements to fetch the ground of all, from Nature her selfe, which indeed is the simplest mother of Art. Therefore I will now onely deliver a few of the properest, and (as I may say) of the naturalest considerations, that belong to this remayning Piece.

There are two extremities to be avoyded in the Cover, or Roofe: That it be not too heavy, nor too light. The first, will suffer a vulgar obiection of pressing too much the under-worke. The other, containeth a more secret inconvenience; for the Cover is not onely a bare defence, but likewise a kinde of Band or Ligature, to the whole Fabrique, and therefore would require some reasonable weight. But of the two extreames, a House Top-heavie is the worst. Next there must bee a care of Equality, that the Edifice be not pressed on the one side more then on the other; and here Palladio doth wish (like a cautelous Artizan) that the inward Walles might beare some


good share in the burthen, and the outward be the lesse charged.

Thirdly, the Italians are very precise in giving the Cover a gracefull pence or slopenesse, dividing the whole breadth into Nine parts : whereof two shal serve for the elevation of the highest Toppe or Ridge, from the lowest. But in this point the quality of the Region is considerable : For (as our Vitruvius insinuateth) those Climes that feare the falling and lying of much Snow, ought to provide more inclining Pentices : and Comelinesse must yeeld to Necessity.

These are the usefulest Cautions which I finde in Authors, touching the last Head of our Division, wherewith I will conclude the first Part of my present Travaile. The second remayneth, concerning Ornaments within, or without the Fabrique : A Piece not so dry as the meere Contemplation of proportions. And therefore I hope therein, somewhat to refresh both the Reader, and my selfe. ♣

OF THE ELEMENTS OF ARCHITECTURE.

The II. part.

 VERY Mans proper Mansion House and Home, being the Theater of his Hospitality, the Seate of Selfe-fruition, the Comfortablest part of his owne Life, the Noblest of his Sonnes Inheritance, a kinde of private Princedome ; Nay, to the Possessors thereof, an Epitomie of the whole World: may well deserve by these Attributes, according to the degree of the Master, to be decently and delightfully adorned. For which ende, there are two Arts attending on Architecture, like two of her principall Gentlewomen, to dresse and trimme their Mistresse ; PICTURE & SCULPTURE : Between whom, before I proceed any further, I wil venture to determine an ancient quarrell about their Precedency, with this Distinction ; that in the garnishing of Fabriques, Sculpture no doubt must have the preheminence, as being indeede of neerer affinity to Architecture it selfe, and

consequently the more naturall, and more sutable Ornament. But on the other side, (to consider these two Arts as I shall doe Philosophically, and not Mechanichally) An excellent Piece of Painting, is to my iudgement the more admirable Obiect, because it comes neere an Artificiall Miracle; to make diverse distinct Eminences appeare upon a Flat, by force of Shadowes, and yet the Shadowes themselves not to appeare: which I conceive to be the uttermost value and vertue of a Painter, and to which very few have arrived in all Ages.

In these two Arts (as they are appliable to the Subiect which I handle) it shall bee fit first to consider how to choose them; and next, how to dispose them. To guide us in the choyce, wee have a Rule somewhere (I well remember) in Pliny, and it is a prettie observation: That they doe mutually helpe to censure one another. For Picture is best when it standeth off, as if it were carved; and Sculpture is best when it appeareth so tender, as if it were painted, I meane, when there is such a seeming softnesse in the Limbes, as if not a Chissell had hewed them out of Stone, or other

Materiall, but a Pensill had drawne and stroaked them in Oyle, which the iudicious Poet tooke well to his Fancy.

Excudent alij spirantia mollius æra.

But this generalitie, is not sufficient to make a good chooser, without a more particular contraction of his Iudgement. Therefore when a Piece of Art, is set before us, let the first Caution be, not to aske who made it, least the Fame of the Author doe Captivate the Fancie of the Buyer. For, that excellent Men doe alwaies excellently, is a false Conclusion ; whereupon I observe among Italian Artizans three notable Phrases, which well decipher the degrees of their Workes.

They will tell you, that a thing was done *Con diligenza*, *Con studio*, and *Con Amore* ; The first, is but a bare and ordinary diligence ; The second, is a learned diligence ; The third, is much more, even a loving diligence ; They meane not with love to the Bespeaker of the Worke, but with a love and delight in the Worke it selfe, upon some speciall Fancie to this, or that Storie ; And when all these concur (perticularly the last) in an eminent Author, Then perchance

Titianus Fecit, or *ὁ Φειδίας ἐποίησεν* will serve the Turne, without farther Inquisition ; Otherwise Artizans have not onely their growthes and Perfections, but likewise their Vaines and Tymes.

The next Caution must be (to proceede Logically) that in Iudging of the Worke it selfe, wee bee not distracted with too many things at once ; Therefore first (to beginne with Picture) we are to observe whether it beewell drawne, (or as more elegant Artizans tearme it) well Design'd ; Then whether it be well Coloured, which bee the two generall Heads ; And each of them hath two principall Requisites ; For in well Designing, there must be Truth and Grace, In well Colouring, Force, and Affection ; All other Praises, are but Consequences of these.

Truth (as we Metaphorically take it in this Art) is a Iust and Naturall Proportion, in every Part of the determined Figure. Grace is a certaine free disposition, in the whole Draught, answerable to that unaffected franknes of Fashion, in a living Bodie, Man or Woman, which doth animate Beautie where it is, and supplie it, where it is not.

Force consisteth, in the Roundings & Raisings of the Worke, according as the Limbes doe more or lesse require it; So as the Beholder, shall spie no sharpenesse in the bordering Lines; As when Taylors cut out a Sute, which Italians doe aptly tearme according to that comparison, *Contorni taglianti*; Nor any flatnesse within the Bodie of the Figure, which how it is done, we must fetch from a higher Discipline; For the Optiques teach us, That a plaine, will appeare prominent, and (as it were) embossed, if the Parts farthest from the Axel-tree or middle Beame of the Eye, shalbe the most shadowed. Because in all Darknesse, there is a kinde of Deepenesse, But as in the Arte of perswasion, one of the most Fundamentall Precepts is; the concealement of Arte, Soe here likewise, the Sight must be sweetly deceaved, by an insensible passage, from brighter colours, to dimmer, which Italian Artizans calle the middle Tinctures; That is, Not as the whites, and yolkes of Egges lie in the Shell, with visible distinction; But as when they are beaten, and blended, in a Dish: which is the neerest comparison, that I can suddenly conceive.

Lastly, Affection is the Lively Representation, of any passion whatsoever, as if the Figures stood not upon a Cloth or Boorde, but as if they were acting upon a Stage; And heere, I must remember, in truth with much marveile, a note, which I have received, from excellent Artizans, that though Gladnesse, and Griefe, be opposites in Nature; yet they are such Neighbours and Confiners in Arte, that the least touch of a Pensill, will translate a Crying, into a Laughing Face;¹ which Instance, besides divers other, doth often reduce unto my memorie, that Ingenious Speculation, of the Cardinall Cusanus extant in his Workes, touching the Coincidence of extreames. And thus much of the foure Requisites, and Perfections in Picture.

¹ This coincidence of extreame affections I observe represented by Homer in the person of Hector's wife as Paynters and Poetes have alwaies had a kind of congenialittie.

Ὡς εἰπὼν ἀλόχοιο φίλης ἐν χερσὶν ἔθηκεν
 Παῖδ' ἰόν, ἣ δ' ἄρα μιν κηῶδεῖ δέξατο κόλπῳ
 Δακρυόεν γνάσσασα.—[Hom. Il., vi, 482.]

that is, She tooke her Childe into her fragrant bosome weepingly laughing.

In Sculpture likewise, the Two first are absolutely necessarie; The third impertinent; For Solide Figures neede no elevation, by force of Lights, or shadowes; Therefore in the Roome of this, wee may put (as hath beene before touched) a kinde of Tendernesse, by the Italians tearmed *Morbidezza*, wherein the Chissell, I must confesse, hath more glory then the Pensill; that being so hard an Instrument, and working upon so unpliant stuffe, can yet leave Strokes of so gentle appearance.

The Fourth, which is the expressing of Affection (as farre as it doth depend upon the Activity, and Gesture of the Figure) is as proper to the Carver, as to the Painter; though Colours, no doubt, have therein the greatest Power; whereupon, perchance, did first grow with us the Fashion of colouring, even Regall Statues, which I must take leave to call an English Barbarisme.

Now in these fower Requisites already rehearsed, it is strange to note, that no Artizan, having ever beene blamed for excesse in any of the three last; onely Truth (which should seeme the most Innocent) hath suffered some Obiection, and all Ages,

have yeelded some one or two Artificers, so prodigiously exquisite, that they have beene reputed too Naturall, in their Draughts ; which will well appeare, by a famous Passage in Quintilian, touching the Characters of the ancient Artizans, falling now so aptly into my memory, that I must needs translate it, as in truth it may well deserve.

The Place which I intend, is extant in the last Chapter save one of his whole Worke, beginning thus in Latine.

Primi, quorum quidem opera non vetustatis modo gratia visenda sunt clari Pictores fuisse dicuntur, Polygnotus atque Aglaophon &c.

The whole Passage, in English standeth thus :

The first Painters of name, whose Workes bee considerable for any thing more then onely Antiquitie, are said to have beene Polygnotus, and Aglaophon ; whose bare Colourings (hee meanes I thinke in white and blacke) hath even yet so many followers, that those rude and first Elements, as it were of that, which within a while, became an Arte, are preferred, before the greatest

Painters that have beene extant after them, out of a certaine Competition (as I conceive it) in point of Iudgement. After these, Zeuxes and Parasius not farre distant in age, both about the time of the Peloponesian Warre, (for in Xenophon wee have a Dialogue betweene Parasius and Socrates) did adde much to this Arte. Of which the first is said, to have invented the due disposition of Lights and Shadowes; The second, to have more subtilly examined, the truth of Lines in the Draught; for Zeuxes did make Limbes, bigger then the life; deeming his Figures, thereby the more stately and Maiesticall; & therein (as some thinke) imitating Homer, whom the stoutest forme doth please, even in Women. On the other side, Parasius did exactly limit all the Proportions so, as they call him the Law giver, because in the Images of the Gods and of Heroicall Personages, others have followed his Paternes like a Decree; But Picture did most flourish, about the daies of Phillip and even to the Successours of Alexander; yet by sundry habilities; for Protogenes, did excell in Diligence; Pamphilus and Melanthius in due Proportion, Antiphilus in a Franke

Facilitie ; Theon of Samos, in strength of Fantasie and conceiving of Passions ; Appelles, in Invention, and Grace, whereof hee doth himselfe most vaunte ; Euphranor, deserves admiration, that being in other excellent studies, a principall Man, he was likewise a wondrous Artizan, both in Painting and Sculpture. The like difference we may observe among the Statuaries ; for the workes of Calon and Egesias were somewhat stiffe, like the Tuscan manner ; Those of Calamis not done with so cold stroakes ; And Myron more tender then the former ; a diligent Decency in Polycletus above others, to whom though the highest prayse bee attributed by the most, yet lest he should goe free from exception, some thinke hee wanted solemnnesse ; for as he may perchance be sayd to have added a comely dimension to humane shape, somewhat above the truth ; so on the other side, hee seemed not to have fully expressed the Maiesty of the Gods : Moreover, hee is sayd not to have medled willingly with the graver age, as not adventuring beyond smooth cheekes : But these vertues that were wanting in Polycletus, were supplied by Phidias and

Alcmenes, yet Phidias was a better Artizan in the representing of Gods, then of Men ; and in his workes of Ivorie, beyond all emulation, even though hee had left nothing behinde him, but his Minerva at Athens, or the Olympian Iupiter in Elis, whose Beautie seemes to have added somewhat, even to the received Religion ; the Maiestie of the Worke, as it were equalling the Deity. To Truth, they affirme Lysippus and Praxiteles, to have made the neerest approach : for Demetrius is therein reprehended, as rather exceeding then deficient ; having beene a greater aymer at Likenes, then at Lovelines.

This is that witty Censure of the ancient Artizans, which Quintilian hath left us, where the last Character of Demetrius doth require a little Philosophicall examination ; How an Artificer, whose end is the imitation of Nature, can bee too naturall ; which likewise in our dayes was either the fault, or (to speake more gently) the too much perfection of Albert Durer, and perhaps also of Michael Angelo da Buonaroti, betweene whom I have heard noted by an ingenious Artizan, a prety nice difference, that the German did too much expresse that which

was ; and the Italian, that which should be :
Which severe observation of Nature, by
the one in her commonest, and by the other
in her absolutest Formes, must needs pro-
duce in both a kinde of Rigidity, and con-
sequently more naturalnesse then graceful-
nesse : This is the cleerest reason, why
some exact Symmetrists have been blamed,
for being too true, as neere as I can deliver
my conceit. And so much touching the
choyce of Picture and Sculpture : The next
is, the application of both, to the beautify-
ing of Fabriques.

First therefore touching Picture, there
doth occurre a very pertinent doubt, which
hath beene passed over too slightly, not
onely by some Men, but by some Nations ;
namely, whether this Ornament can wel
become the Outside of houses, wherin the
Germanes have made so little scruple, that
their best Townes are the most painted, as
Augusta and Norembergh. To determine
this question in a word : It is true, that a
Story well set out with a good Hand, will
every where take a Iudicious eye : But yet
withal it is as true, that various colours on
the Out-walles of Buildings, have alwayes

in them more Delight then Dignity: Therefore I would there admit no Paintings but in Blacke and White, nor even in that kinde any Figures (if the roome be capable) under Nine or Ten foot high, which will require no ordinary Artizan; because the faults are more visible then in small Designes. In unfigured paintings the noblest is, the imitation of Marbles, & of Architecture it selfe, as Arches, Freezes, Columnnes, and the like.

Now for the Inside, heere growes another doubt, whether Grotesca (as the Italians) or Antique worke (as wee call it) should be received, against the expresse authoritie of Vitruvius himselfe, lib. 7. cap. 5. where *Pictura* (saith hee) *Fit eius, quod est, seu potest esse*, excluding by this severe definition, all Figures composed of different Natures or Sexes; so as a Syrene or a Centaure had beene intolerable in his eye: But in this wee must take leave to depart from our Master, & the rather because he spake out of his owne profession, allowing Painters (who have ever bin as little limited as Poets) a lesse scope in their imaginations, even then the gravest Philosophers, who some-

times doe serve themselves of Instances, that have no Existence in Nature; as wee see in Platoes Amphiborna, & Aristotles Hirco-Cervus. And (to settle this point) what was indeede more common and familiar among the Romanes themselves, then the Picture and Statue of Terminus, even one of their Deities? which yet if we well consider, is but a piece of Grotesca; I am for these reasons unwilling to impoverish that Art, though I could wish such medlie and motlie Designes, confined onely to the Ornament of Freezes, and Borders, their properest place. As for other Storied Workes upon Walles, I doubt our Clime bee too yeelding and moist, for such Garnishment; therefore leaving it to the Dwellers discretion, according to the qualitie of his Seat; I will onely adde a caution or two, about the disposing of Pictures within.

First, that no Roome bee furnished with too many, which in truth were a Surfet of Ornament, unlesse they bee Galleries, or some peculiar Repository for Rarities of Art.

Next, that the best Pieces be placed not where there is the least, but where there

are the fewest lights; therefore not onely Roomes windowed on both ends, which we call through-lighted; but with two or moe Windowes on the same side, are enemies to this Art; and sure it is, that no Painting can be seene in full Perfection but (as all Nature is illuminated) by a single Light.

Thirdly, that in the placing there be some care also taken, how the Painter did stand in the Working, which an intelligent Eye, will easily discover, and that Posture is the most naturall; so as Italian pieces will appeare best in a Roome where the Windowes are high; because they are commonly made to a descending Light, which of all other, doth set off mens Faces in their truest Spirit.

Lastly, that they bee as properly bestowed for their quality, as fitly for their grace: that is, chearefull Paintings in Feasting and Banquetting Roomes; Graver Stories in Galleries, Land-schips, and Boscage, and such wilde workes in open Tarraces, or in Summer houses (as we call them) and the like.

And thus much of Picture, which let mee close with this Note; that though my

leaves it to the Artist to be perceived in
the manner of the thing in the course of
such things: yet as he hath hope in such
a representation, as to observe the
Manner and Mysterious qualities of the
in human nature: as which nature
we must leave the prerogative, to observe
the manner and handling, as we ourselves
must likewise leave some points, perception
of us, leave value to others: as for example,
whether the Story be rightly represented,
the Figures in true action, the Persons suited
to their severall qualities, the affections pro-
per and strong, and such like observations.

Now for Sculpture, I must likewise begin
with a Controversie, as before (falling into
this Place) or let mee rather call it a very
meere Fancie, strangely taken by Palladio,
who having noted in an old Arch or two at
Verona, some part of the Materials already
cut in fine Formes, and some unpolished,
doth conclude (according to his Logicke)
uppon this particular, that the Auncients did
leave the outward Face, of their Marbles
or Free-stone, without any Sculpture, till
they were laid, and Cimented, in the bodie
of the Building; For which likewise hee

findeth a reason (as many doe now and then very wittily, even before the thing it selfe be true) that the Materialls being left rough were more managable in the Masons hand, then if they had beene smooth, And that so the sides might bee laide together the more exactly; Which Conceit, once taken hee seemes to have farther imprinted, by marking in certaine Storied Sculptures, of oulde time how precisely the parts and Lines of the Figures that passe from one Stone to another, doe meete; which hee thinkes could hardly fall out so right, (forgetting while he speakes of ancient things, the auncient Diligence) unlesse they had beene cut, after the ioyning of the Materials, But all these Inducements, cannot counter-vaille the sole Inconvenience of shaking, and Disioynting the Commissures with so many Strokes of the Chissell, besides an Incommodious Working on Scaffolds; especially having no testimonie, to confirme it, that I have yet seene among the records of Art; Nay, it is indeede rather true, that they did square, and Carve, and Polish, their Stone and Marble Workes, even in the very Cave of the Quarrie, before it was

hardened by open Aire; But (to leave disputation) I will set downe a few Positive notes, for the placing of Sculpture; because the choosing hath beene handled before.

That first of all, it bee not too generall and abundant, which would make a House, looke like a Cabbinet, & in this point, morall Philosophie which tempereth Fancies, is the Superintendent of Art.

That especially, There bee a due moderation of this Ornament in the first approach; where our Authors doe more commend (I meane about the Principall Entrance) a Dorique, then a Corinthian garnishment; So as if the great Doore, be Arched, with some brave Head, cut in fine Stone or Marble for the Key of the Arch, and two Incumbent Figures gracefully leaning upon it, towards one another, as if they meant to conferre; I should thinke this a sufficient entertainment, for the first Reception, of any Iudicious Sight, which I could wish seconded, with two great standing Statues on each side of a paved way that shall leade up into the Fabrique, So as the Beholder at the first entrance, may passe his Eye betweene them.

That the Nices, if they containe Figures of white Stone or Marble, bee not coloured in their Concavities too blacke, For though *Contraria iuxta se posita magis illucescunt* (by an olde Rule) yet it hath beene subtilly, and indeede truely noted that our Sight, is not well contented, with those sudden departments, from one extreame, to another; Therefore let them have, rather a Duskish Tincture, then an absolute blacke.

That fine and delicate Sculptures, be helped with Neerenes, and Grosse with distance; which was well seene in the olde controversie, betweene Phidias and Alcmenes about the Statue of Venus: wherein the First did shew discretion, and save labour, because the Worke was to bee viewed at good Height, which did drowne the sweete and diligent strokes of his Adversarie: A famous emulation of two principall Artizans, celebrated even by the Greeke Poets.

That in the placing of standing Figures aloft, wee must set them in a Posture somewhat bowing forward; because (saith our Master, lib. 3. cap. 3. out of a better Art then his owne) the visuall beame of our eye, extended to the Head of the said Figures,

being longer then to the Foote, must necessarily make that part appeare farther ; so as to reduce it to an erect or upright position, there must be allowed a due advantage of stooping towards us ; which Albert Durer hath exactly taught, in his fore mentioned Geometry. Our Vitruvius calleth this affection in the Eye, a resupination of the Figure : For which word (being in truth his owne, for ought I know) we are almost as much beholding to him, as for the observation it selfe : And let thus much summarily suffice, touching the choice and use of these adorning Arts. For to speake of garnishing the Fabrique with a Row of erected Statues, about the Cornice of every Contignation or Story, were discourse more proper for Athens or Rome, in the time of their true greatnesse, when (as Plinie recordeth of his own Age) there were neere as many carved Images, as living Men ; like a noble contention, even in point of Fertility, betweene Art and Nature ; which passage doth not onely argue an infinite abundance, both of Artizans and Materials ; but likewise of Magnificent and Majesticall desires, in every common person of those

times; more or lesse according to their Fortunes. And true it is indeed that the Marble Monuments & Memories of well deserving Men, wherewith the very high wayes were strewed on each side was not a bare and transitory entertainment of the Eye, or onely a gentle deception of Time, to the Travailer : But had also a secret and strong Influence, even into the advancement of the Monarchie, by continuall representation of vertuous examples ; so as in that point ART became a piece of State.

Now as I have before subordinated Picture, and Sculpture to Architecture, as their Mistresse ; so there are certaine inferior ARTS likewise subordinate to them : As under Picture, Mosaique ; under Sculpture, Plastique ; which two, I onely nominate, as the fittest to garnish Fabriques.

Mosaique is a kinde of Painting in small Pebbles, Cockles and Shells of sundry colours ; and of late dayes likewise with pieces of Glasse, figured at pleasure ; an Ornament in trueth, of much beauty, and long life, but of most use in pavements and Floorings.

Plastique is not onely under Sculpture,

but in deed very Sculpture it selfe : but with this difference ; that the Plasterer doth make his Figures by Addition, and the Carver by Subtraction, whereupon Michael Angelo was wont to say somewhat pleasantly : That Sculpture was nothing but A purgation of superfluities. For take away from a piece of wood, or stone, all that is superfluous, and the remainder is the intended Figure. Of this Plastique Art, the chiefe use with us is in the gracefull fretting of roofes : but the Italians applie it, to the manteling of Chimneys, with great Figures. A cheape piece of Magnificence, and as durable almost within doores, as harder Forms in the weather. And here though it bee a little excursion, I cannot passe unremembred a gaine, their manner of disguising the shaftes of Chimneys in various fashions, whereof the noblest is the Pyramidall : beeing in trueth a piece of polite and civill discretion, to convert even the conduits of soote and smoake, into Ornaments ; whereof I have hitherto spoken as farre as may concerne the Bodie of the Building.

Now there are Ornaments also without, as Gardens, Fountaines, Groves, Conserva-

tories of rare Beasts, Birds, and Fishes. Of which ignobler kind of Creatures, Wee ought not (saith our greatest Master among the sonnes of Nature) childishly to despise the Contemplation; for in all things that are naturall, there is ever something, that is admirable. Of these externall delights, a word or two.

First, I must note a certaine contrarietie betweene building and gardening: For as Fabriques should bee regular, so Gardens should bee irregular, or at least cast into a véry wilde Regularitie. To exemplifie my conceit; I have seene a Garden (for the maner perchance incomparable) into which the first Accesse was a high walke like a Tarrace, from whence might bee taken a generall view of the whole Plott below; but rather in a delightfull confusion, then with any plaine distinction of the pieces. From this the Beholder descending many steps, was afterwards conveyed againe, by severall mountings and valings, to various entertainements of his sent, and sight: which I shall not neede to describe (for that were poetically) let me onely note this, that every one of these diversities, was as if hee had

Arist. lib. 1,
cap. 5, de
part. Anim.
δὲ μὴ δυσχεραί-
νον παιδικῶς
τὴν περὶ τῶν ἀτι-
μωτέων ζῴων
ἐπισκοπῆν. Ἐν
πᾶσι γὰρ τοῖς
φυσικοῖς ἑστέ τι
θαυμαστόν.

beene Magically transported into a new Garden.

But though other Countreys have more benefite of Sunne then wee, and thereby more properly tyed to contemplate this delight; yet have I seene in our owne, a delicate and diligent curiositie, surely without parallel among foreigne Nations: Namely, in the Garden of Sir Henry Fanshaw, at his seat in Ware Parke, where I wel remember, hee did so precisely examine the tinctures, and seasons of his flowres, that in their setting, the inwardest of those which were to come up at the same time, should be alwayes a little darker then the outmost, and so serve them for a kinde of gentle shadow, like a piece not of Nature, but of Arte: which mention (incident to this place) I have willingly made of his Name, for the deare friendship that was long betweene us: though I must confesse, with much wrong to his other vertues; which deserve a more solide memoriall, then among these vacant observations. So much of Gardens.

Fountaines are figured, or only plaine Water'd-workes: Of either of which, I will describe a matchlesse patterne.

The first, done by the famous hand of Michael Angelo da Buonaroti, in the figure of a sturdie woman, washing and winding of linnen clothes ; in which Acte, shee wrings out the water that made the Fountaine ; which was a gracefull and naturall conceit in the Artificer, implying this rule ; That all designes of this kind, should be proper.

The other doth merite some larger expression ; There went a long, straight, mossie walke of competent breadth, greene, and soft under foot, listed on both sides with an Aquæduct of white stone, breast-high, which had a hollow channell on the top, where ranne a pretie trickling streame ; on the edge whereof, were couched very thicke all along, certaine small pipes of lead, in little holes ; so neatly, that they could not be well perceived, till by the turning of a cocke, they did sprout over interchangeably from side to side, above mans height, in forme of Arches, without any intersection or meeting aloft, because the pipes were not exactly opposite ; so as the Beholder, besides that, which was fluent in the Aquæducts on both hands in his view, did walke as it were,

under a continuall bowre or Hemisphere of water, without any drop falling on him. An invention for refreshment, surely farre excellling all the Alexandrian delicacies, and Pneumatiques of Hero.

Groves, and artificiall devices under ground, are of great expence, and little dignitie; which for my part I could wish converted here into those Crypteria, whereof mention is made among the curious provisions of Ticho Braghe the Danish Ptolemie, as I may well call him: which were deepe concaves in gardens, where the starres might be observed even at noone. For (by the way) to thinke that the brightnesse of the Sunnes body above, doth drowne our discerning of the lesser lights, is a popular error; the sole impediment being that lustre, which by reflection, doth spread about us, from the face of the Earth: so as the caves before touched, may well conduce, not to a delicious, but to a learned pleasure.

In Aviaries of wire, to keepe Birdes of all sorts, the Italians (though no wastfull Nation) doe in some places bestow vast expence; including great scope of ground, varietie of bushes, trees of good height,

running waters, and sometimes a Stove annexed, to temper the Aire in Winter. So as those Chanteresses, unlesse they be such as perhaps delight as much in their wing, as in their voice, may live long, among so good provisions and roome, before they know that they are prisoners; reducing often to my memory, that conceit of the Romane Stoicke, who in comparison of his owne free contemplations, did thinke divers great and splendent fortunes of his time, little more then commodious captivities.

Concerning Ponds of pleasure neere the habitation; I will referre my selfe to a grave Author of our owne (though more illustrious by his other worke) namely Sarisburiensis de Piscinâ.

De Nugis
Curial. &c.

And here I will end the second part touching Ornaments, both within, and without the Fabrique.

Now as almost all those, which have delivered the Elements of Logicke, doe usually conclude, with a Chapter touching Methode; so I am heere seized with a kind of critical spirit, & desirous to shut up these building Elements, with some Methodical direction how to censure Fabriques already raised:

for indeed without some way to contract our Iudgement, which among so many particulars would bee lost by diffusion; I should thinke it almost harder to be a good Censurer, then a good Architect: Because the working part may be helped with Deliberation, but the Iudging must flow from an extemporall habite. Therfore, (not to leave this last Piece without some Light) I could wish him that commeth to examine any noble Work, first of all to examine himselfe, whether perchance the sight of many brave things before (which remaine like impressed formes) have not made him apt to thinke nothing good, but that which is the best; for this humour were too sowre. Next, before hee come to settle any imaginable opinion, let him by all meanes seeke to informe himselfe precisely, of the Age of the Worke upon which hee must passe his
+ Doome. And if hee shall finde the apparent decayes to exceed the proportion of Time; then let him conclude without farther inquisition, as an absolute Decree, that either the Materials were too slight, or the Seate is nought. Now, after these premisses, if the House be found to beare his yeares

well, (which is alwayes a token of sound constitution) Then let him suddenly runne backwardes, (for the Methode of censuring is contrary to the Methode of composing) from the Ornaments (which first allure the Eye) to the more essentiall Members, till at last hee be able to forme this Conclusion, that the Worke is Commodious, Firme, and Delightfull; which (as .I said in the beginning) are the three capitall Conditions required in good Buildings, by all Authors both Ancient and Moderne. And this is, as I may tearme it the most Scientificall way of Censuring. There are two other which I must not forget. The first in Georgio Vassari, before his laborious Worke of the lives of Architects, which is to passe a running examination over the whole Edifice, according to the properties of a well shapen Man. As whether the Walls stand upright upon cleane footing and Foundation; whether the Fabrique bee of a beautiful Stature, whether for the breadth it appeare well burnished, whether the principall Entrance be on the middle Line of the Front or Face, like our Mouthes, whether the Windowes, as our Eyes, be set in equall

number and distance on both sides, whether the Offices like the Veines in our Bodies, be usefully distributed, and so forth. For this Allegoricall review may be driven as farre as any Wit will, that is at leasure.

The second way, is in Vitruvius himselfe, lib. 1. cap. 2. where hee summarily determineth six Considerations, which accomplish this whole Art.

Ordinatio.

Dispositio.

Eurythmia.

Symmetria.

Decor, and

Distributio.

Whereof (in my conceit) wee may spare him the first two ; for as farre as I can perceive, either by his Interpreters, or by his own Text (which in that very place, where perchance he should be clearest, is of all other the Clowdiest) hee meaneth nothing by Ordination, but a well setting of the Modell or Scale of the whole Worke. Nor by Disposition, more then a neate and full expression of the first Idea or Designement thereof ; which perchance doe more belong to the Artificer, then to the Censurer. The

other foure are enough to condemne, or absolve any Fabrique whatsoever. Whereof Eurythmia is that agreeable Harmony, betweene the breadth, length, and height of all the Roomes of the Fabrique, which suddenly where it is taketh every Beholder, by the secret power of Proportion : wherein let mee onely note this, That though the least error or offence that can be committed against sight, is excesse of height ; yet that fault is no where of small importance, because it is the greatest offence against the Purse.

Symmetria is the conveniencie that runneth betweene the Parts and the Whole, whereof I have formerly spoken.

Decor is the keeping of a due Respect betweene the Inhabitant, and the Habitation. Whence Palladius did conclude, that the principall Entrance was never to be regulated by any certaine Dimensions ; but by the dignity of the Master ; yet to exceede rather, in the more, then in the lesse, is a marke of Generosity, and may alwayes be excused with some noble Embleme, or Inscription, as that of the Conte di Bevilacqua, over his large Gate at Verona, where per-

~~these had bene committed a little Dis-~~
~~position.~~

Pater Inimic: Car magis.

And ~~these likewise~~ I must remember our
ever memorable Sir Philip Sidney, whose
Wit was in truth the very rule of Congruity;
who well knowing that Basilio (as hee had
painted the Seate of his Murther) did rather
want some extraordinary Formes to enter-
taine his Fancie, then some for Courtiers:
was contented to place him in a Star-like
Lodge; which otherwise in severe Iudge-
ment of Art had bene an incommodious
Figure.

Distribution is that usefull Casting of all
Roomes for Office, Entertainment or Plea-
sure, which I have handled before at more
length, then any other Piece.

These are the Foure Heads which every
man should runne over, before hee passe
any determinate Censure, upon the Works
that he shal view, wherewith I will close
this last part, touching Ornaments. Against
which (mee thinkes) I heare an Obiection,
even from some well-meaning man; That
these delightfull Craftes, may be divers
wayes ill applied in a Land. I must con-

fesse indeede, there may bee a Lascivious, and there may be likewise a superstitious use, both of Picture and of Sculpture: To which possibility of misapplication, not onely these Semi-liberall Arts are subiect; but even the highest perfections, and endowments of Nature. As Beautie in a light woman, Eloquence in a mutinous Man, Resolution in an Assasinate, Prudent observation of houres & humours, in a corrupt Courtier, Sharpenesse of wit and argument in a seducing Scholler; and the like. Nay, finally let mee aske, what ART can be more pernicious, then even RELIGION it selfe, if it selfe be converted into an Instrument of ART: Therefore, *Ab abuti ad non uti, negatur consequentia.*

Thus having stitched in some sort together, these Animadversions, touching Architecture, and the Ornaments thereof; I now feele that contemplative spirits are as restlesse as active; for doubting with my selfe, (as all weakenesse is iealous) that I may be thought to have spent my poore observation abroad, about nothing but Stone and Timber, and such Rubbage; I am

thereby led into an immodestie of proclaiming another Worke, which I have long devoted to the service of my Countrey: Namely, A Philosophicall Survey of Education, which is indeed, a second Building, or repairing of Nature, and, as I may tearme it, a kinde of Morall Architecture; whereof such Notes as I have taken in my foreigne transcursions or abodes, I hope to utter without publike offence, though still with the freedome of a plaine Kentish man. In the meane while I have let these other Gleanings flie abroad, like the Bird out of the Arke, to discover what footing may bee, for that which shall follow. ♣ FINIS. ♣



